FIG. 1

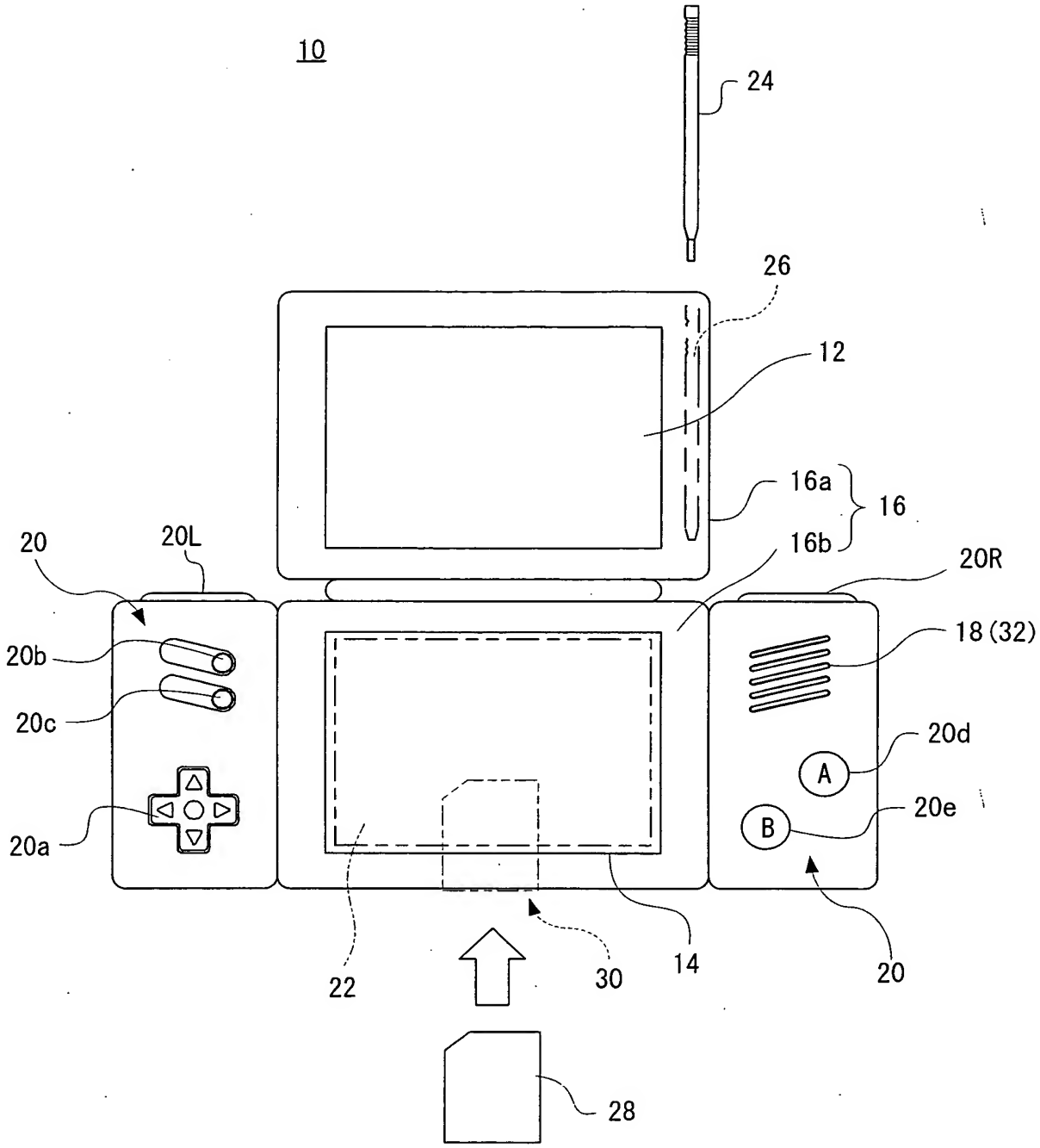

10
24
26
12
16a
16
16b
20
20L
20R
18 (32)
20b
20c
20d
A
20e
B
20a
22
30
14
20
28

FIG. 2

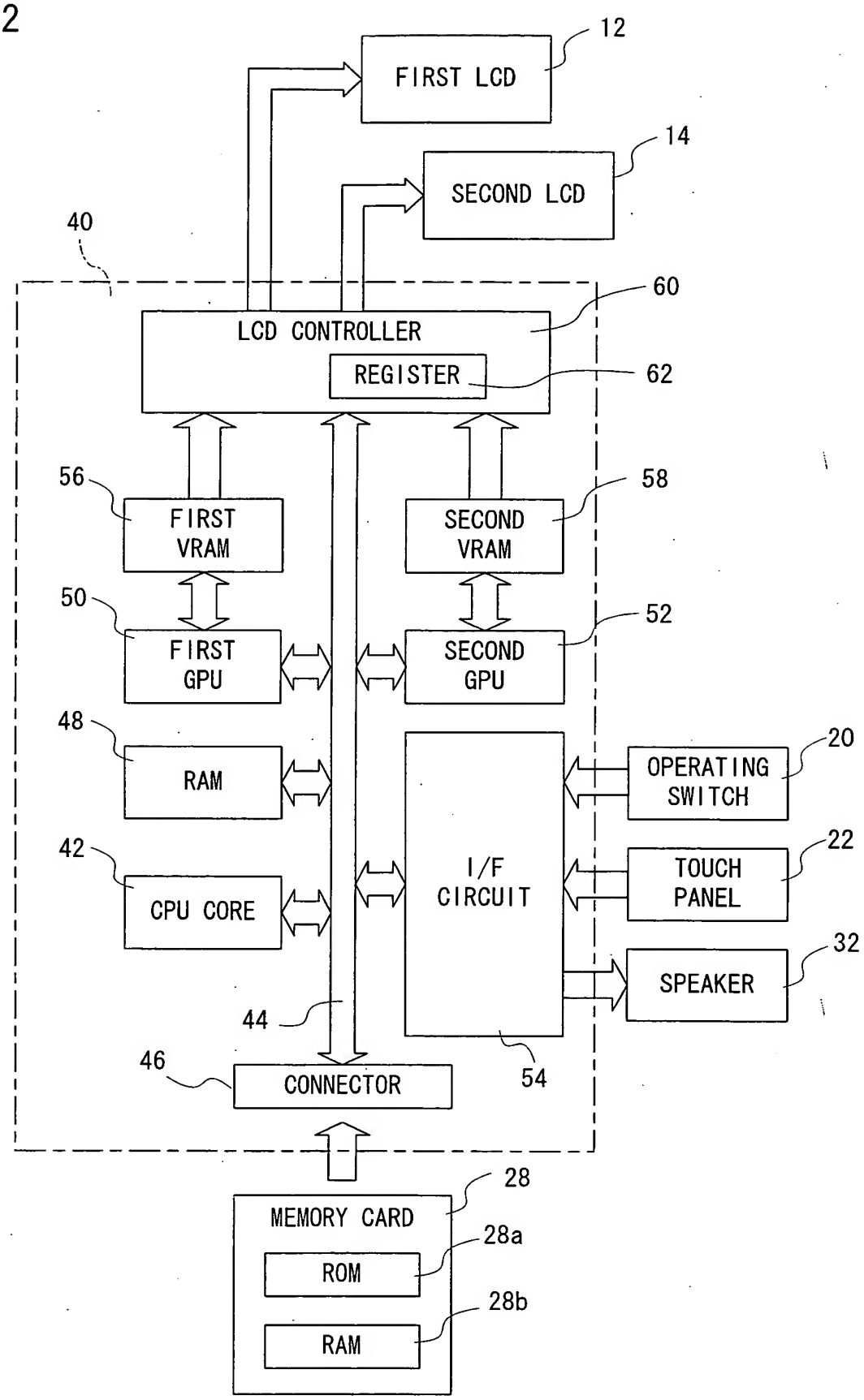

12
FIRST LCD
14
SECOND LCD
40
60
LCD CONTROLLER
REGISTER
62
56
FIRST VRAM
58
SECOND VRAM
50
FIRST GPU
52
SECOND GPU
48
RAM
20
OPERATING SWITCH
42
CPU CORE
I/F CIRCUIT
22
TOUCH PANEL
32
SPEAKER
44
46
CONNECTOR
54
28
MEMORY CARD
28a
ROM
28b
RAM

FIG. 3

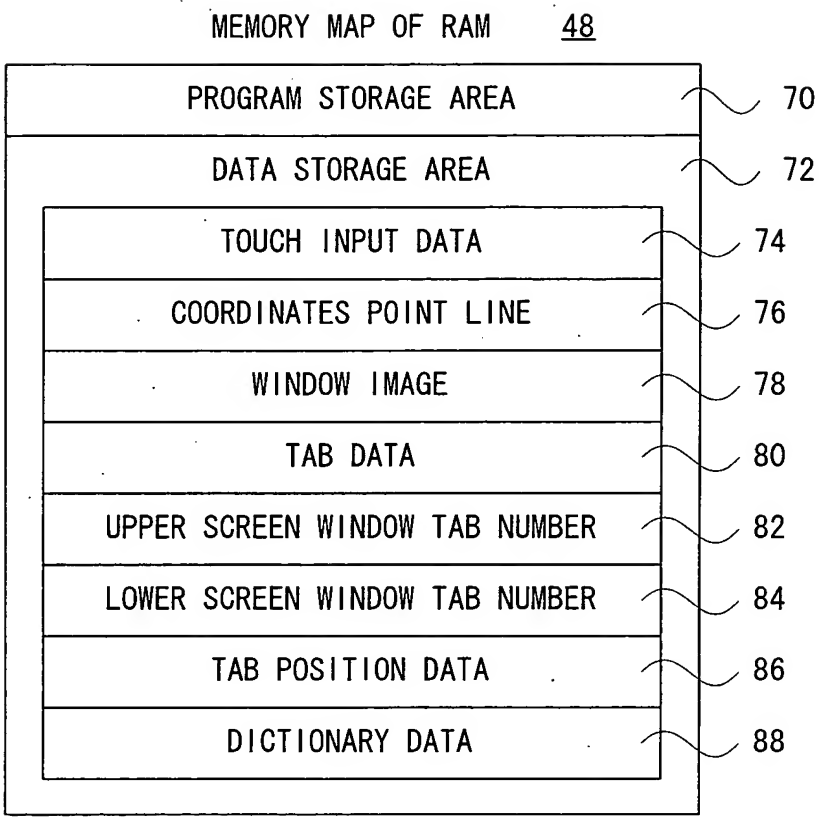


FIG. 4

WINDOW IMAGE STORING AREA

INITIAL ADDRESS OF WINDOW IMAGE	WINDOW IMAGE DATA
00AA	INPUT WINDOW IMAGE
00AB	SEARCH CANDIDATE WINDOW IMAGE
00AC	MINERAL WATER WINDOW IMAGE (DICTIONARY WINDOW)
00AD	MINERAL SALTS WINDOW IMAGE (DICTIONARY WINDOW)
⋮	⋮

FIG. 5

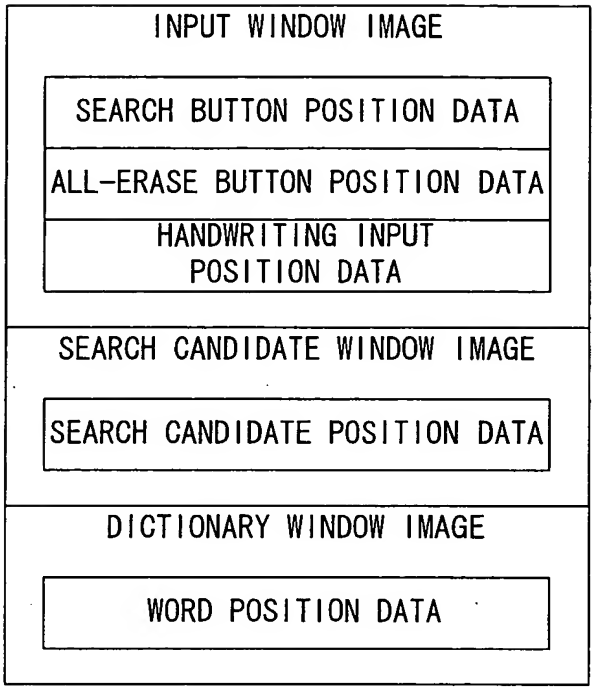


FIG. 6

TAB DATA STORING AREA

TAB NUMBER	TITLE IMAGE DATA	INITIAL ADDRESS OF WINDOW IMAGE
1	SEARCH CANDIDATE	00AB
2	MINERAL WATER	00AC
3	MINERAL SALTS	00AD
⋮	⋮	⋮

FIG. 7

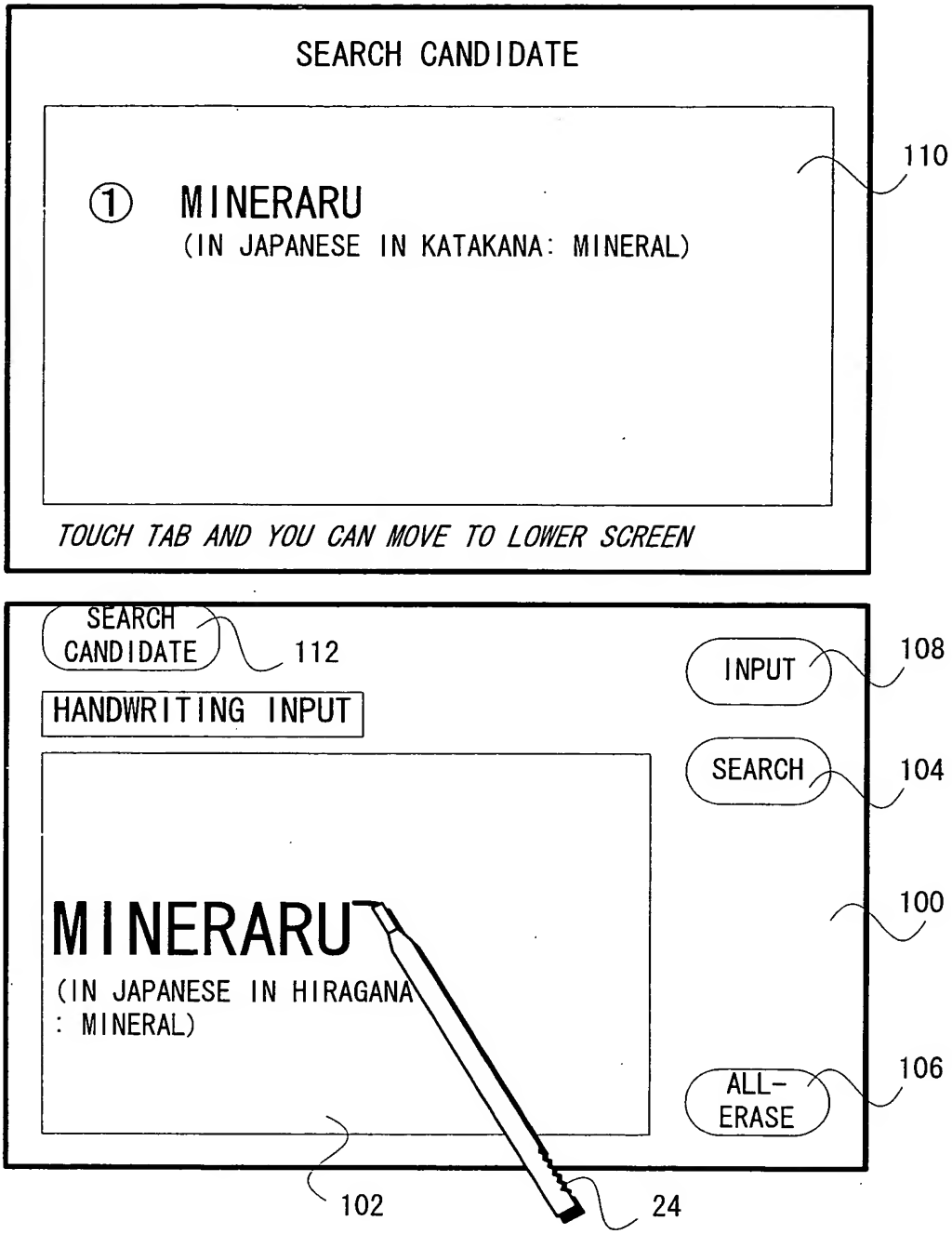

SEARCH CANDIDATE
① MINERARU
(IN JAPANESE IN KATAKANA: MINERAL)
110
TOUCH TAB AND YOU CAN MOVE TO LOWER SCREEN
SEARCH CANDIDATE
112
INPUT
108
HANDWRITING INPUT
SEARCH
104
MINERARU
(IN JAPANESE IN HIRAGANA : MINERAL)
100
ALL-ERASE
106
102
24

FIG. 8

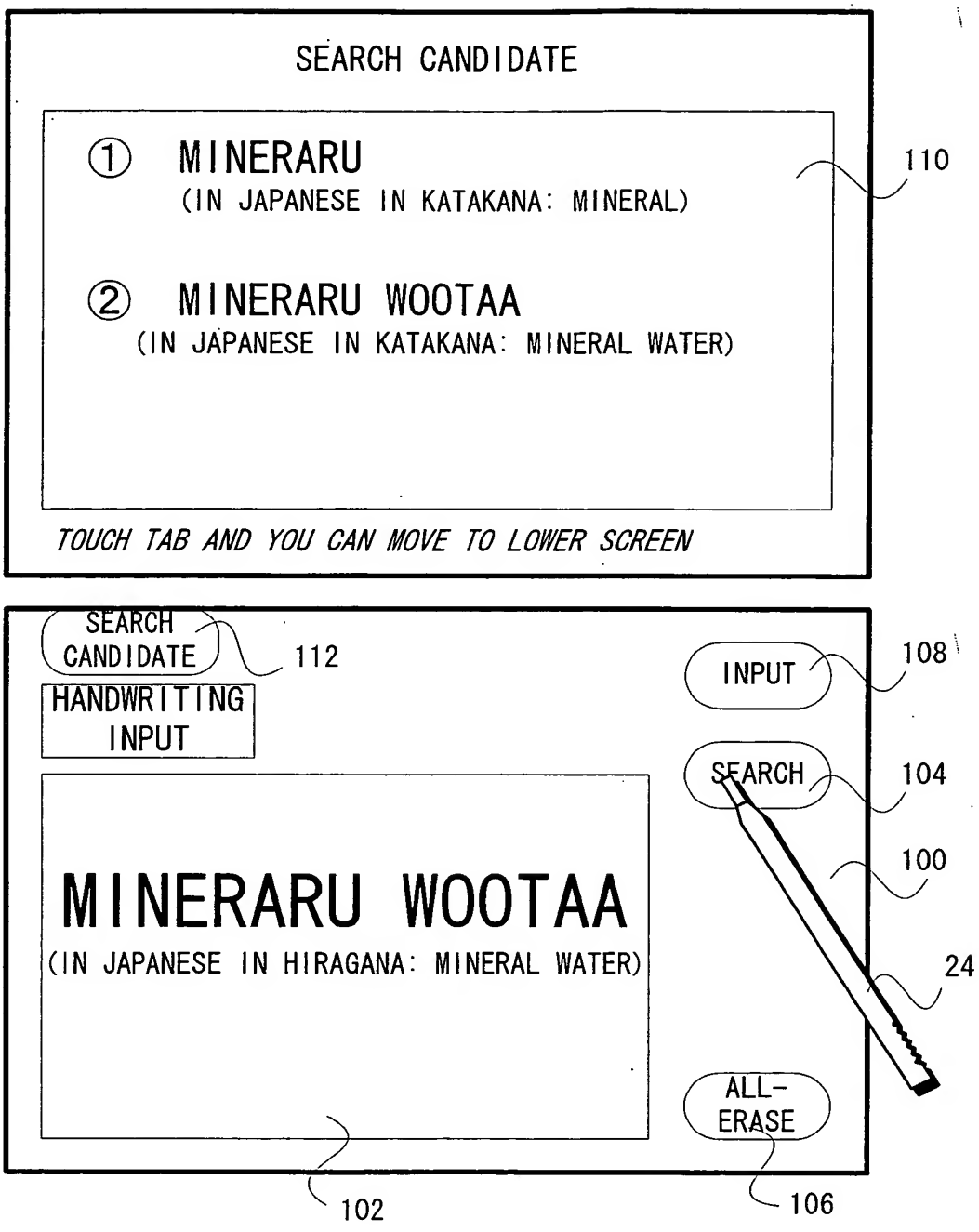

SEARCH CANDIDATE
① MINERARU
(IN JAPANESE IN KATAKANA: MINERAL)
② MINERARU WOOTAA
(IN JAPANESE IN KATAKANA: MINERAL WATER)
110
TOUCH TAB AND YOU CAN MOVE TO LOWER SCREEN
SEARCH CANDIDATE
112
HANDWRITING INPUT
INPUT
108
SEARCH
104
MINERARU WOOTAA
(IN JAPANESE IN HIRAGANA: MINERAL WATER)
100
24
ALL-ERASE
102
106

FIG. 9

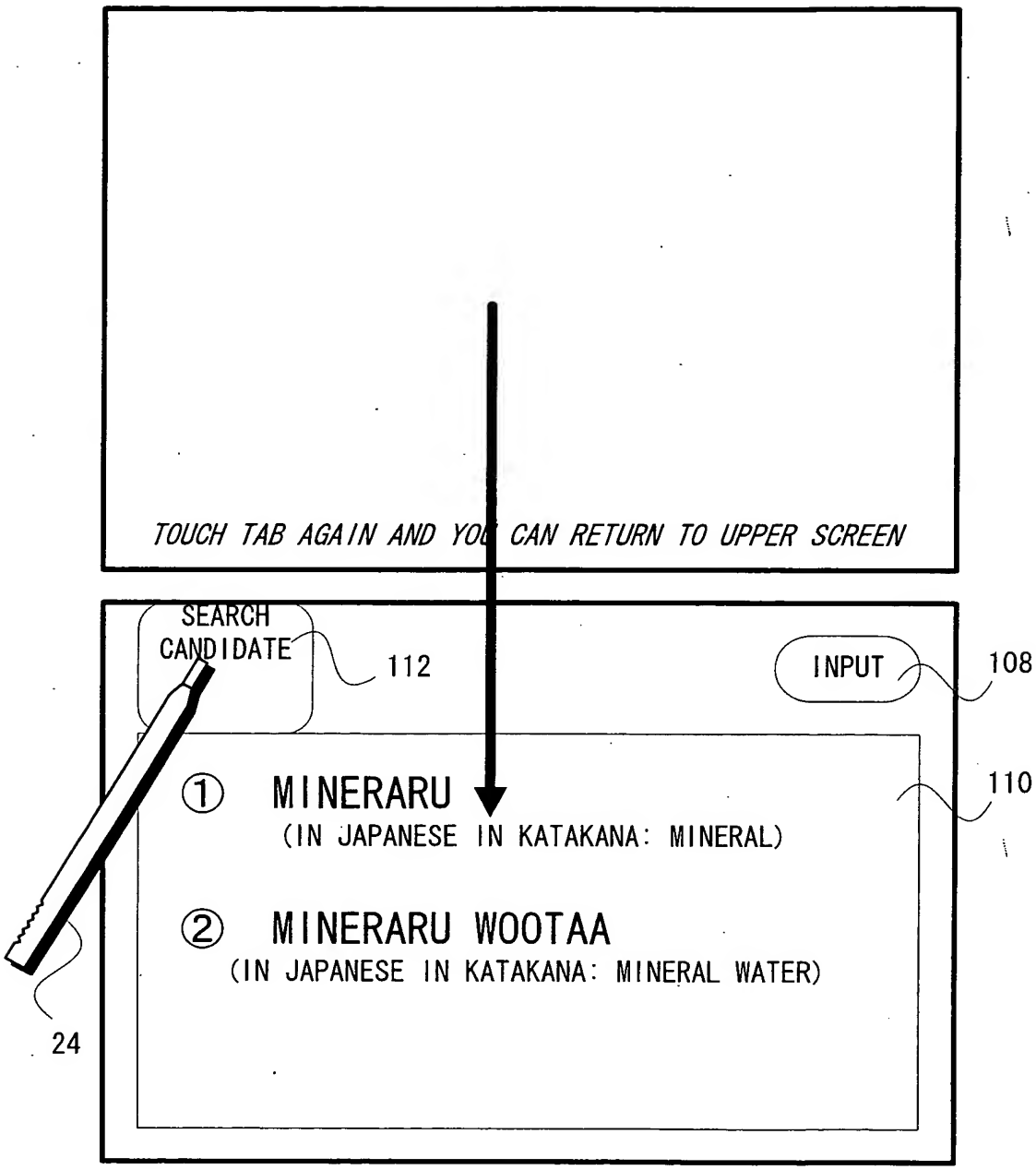

TOUCH TAB AGAIN AND YOU CAN RETURN TO UPPER SCREEN
SEARCH CANDIDATE
112
INPUT
108
110
① MINERARU
(IN JAPANESE IN KATAKANA: MINERAL)
② MINERARU WOOTAA
(IN JAPANESE IN KATAKANA: MINERAL WATER)
24

FIG. 10

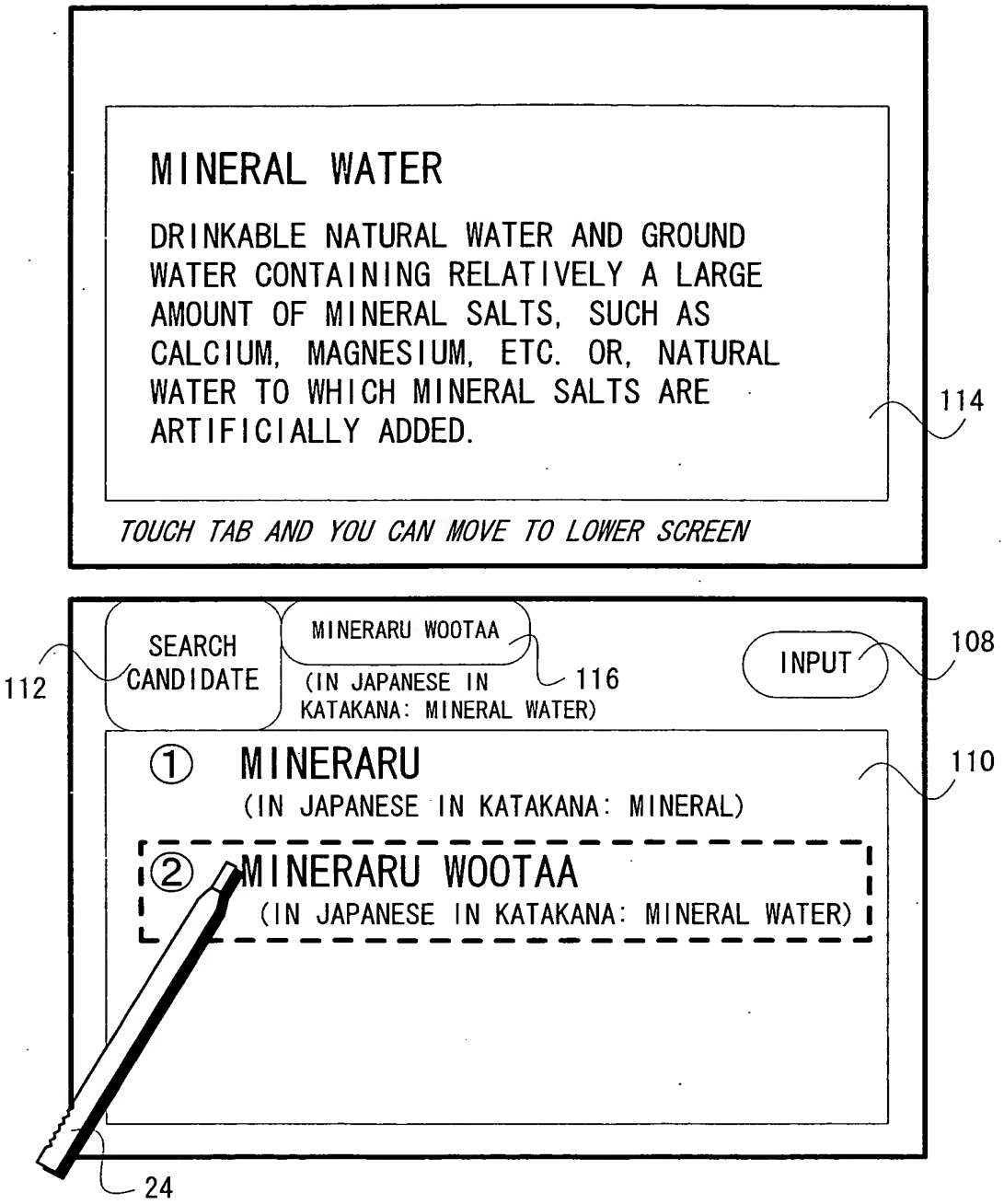

MINERAL WATER
DRINKABLE NATURAL WATER AND GROUND WATER CONTAINING RELATIVELY A LARGE AMOUNT OF MINERAL SALTS, SUCH AS CALCIUM, MAGNESIUM, ETC. OR, NATURAL WATER TO WHICH MINERAL SALTS ARE ARTIFICIALLY ADDED.
114
TOUCH TAB AND YOU CAN MOVE TO LOWER SCREEN
SEARCH CANDIDATE
112
MINERARU WOOTAA
(IN JAPANESE IN KATAKANA: MINERAL WATER)
116
INPUT
108
① MINERARU
(IN JAPANESE IN KATAKANA: MINERAL)
110
② MINERARU WOOTAA
(IN JAPANESE IN KATAKANA: MINERAL WATER)
24

FIG. 11

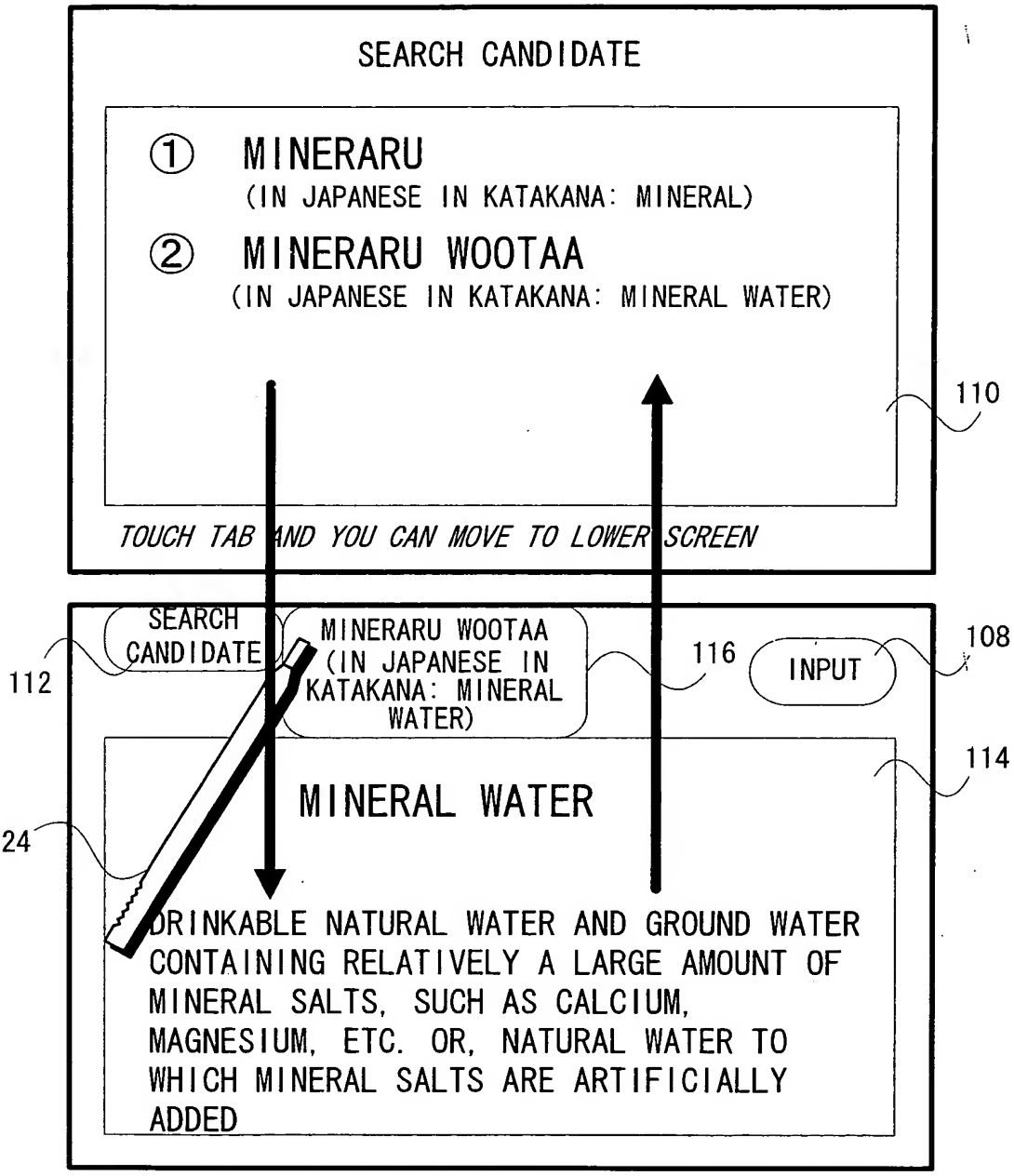

SEARCH CANDIDATE
① MINERARU
(IN JAPANESE IN KATAKANA: MINERAL)
② MINERARU WOOTAA
(IN JAPANESE IN KATAKANA: MINERAL WATER)
110
TOUCH TAB AND YOU CAN MOVE TO LOWER SCREEN
SEARCH CANDIDATE
112
MINERARU WOOTAA (IN JAPANESE IN KATAKANA: MINERAL WATER)
116
INPUT
108
114
MINERAL WATER
24
DRINKABLE NATURAL WATER AND GROUND WATER CONTAINING RELATIVELY A LARGE AMOUNT OF MINERAL SALTS, SUCH AS CALCIUM, MAGNESIUM, ETC. OR, NATURAL WATER TO WHICH MINERAL SALTS ARE ARTIFICIALLY ADDED

FIG. 12

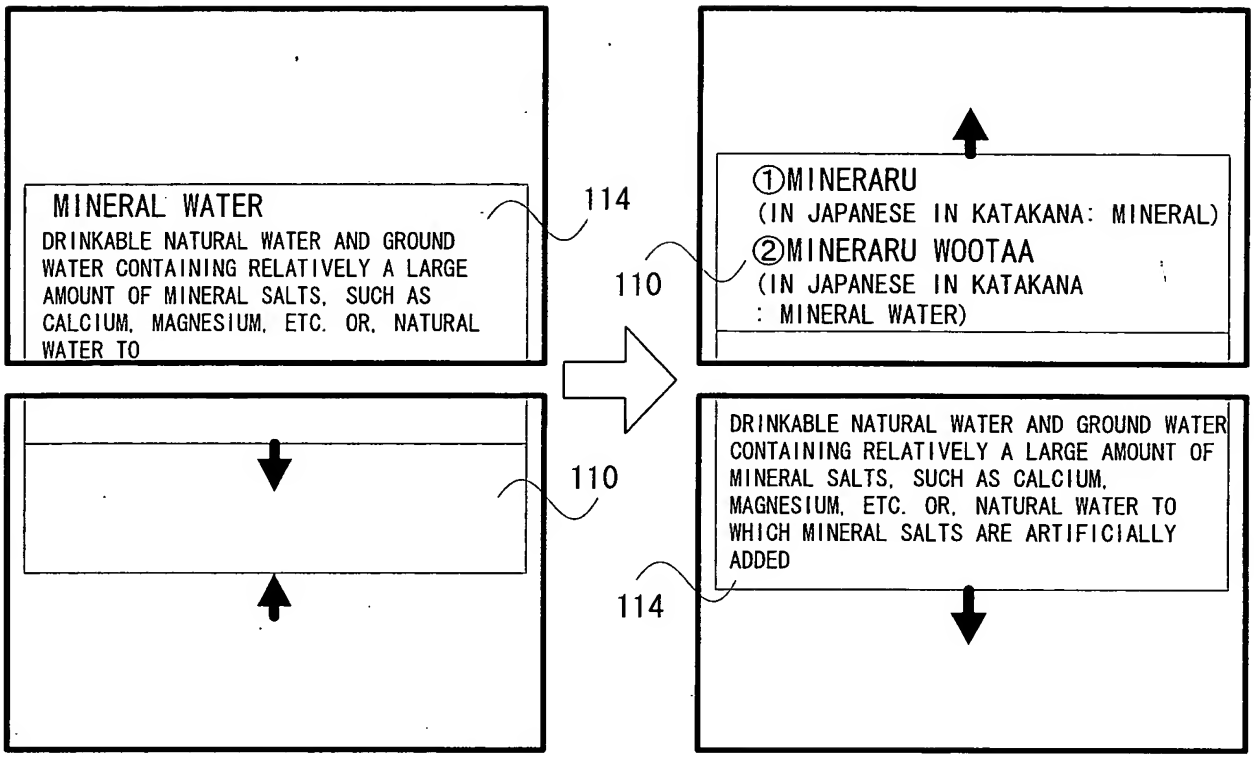

MINERAL WATER
DRINKABLE NATURAL WATER AND GROUND WATER CONTAINING RELATIVELY A LARGE AMOUNT OF MINERAL SALTS, SUCH AS CALCIUM, MAGNESIUM, ETC. OR, NATURAL WATER TO
114
110
①MINERARU
(IN JAPANESE IN KATAKANA: MINERAL)
②MINERARU WOOTAA
(IN JAPANESE IN KATAKANA
: MINERAL WATER)
110
DRINKABLE NATURAL WATER AND GROUND WATER CONTAINING RELATIVELY A LARGE AMOUNT OF MINERAL SALTS, SUCH AS CALCIUM, MAGNESIUM, ETC. OR, NATURAL WATER TO WHICH MINERAL SALTS ARE ARTIFICIALLY ADDED
114

FIG. 13

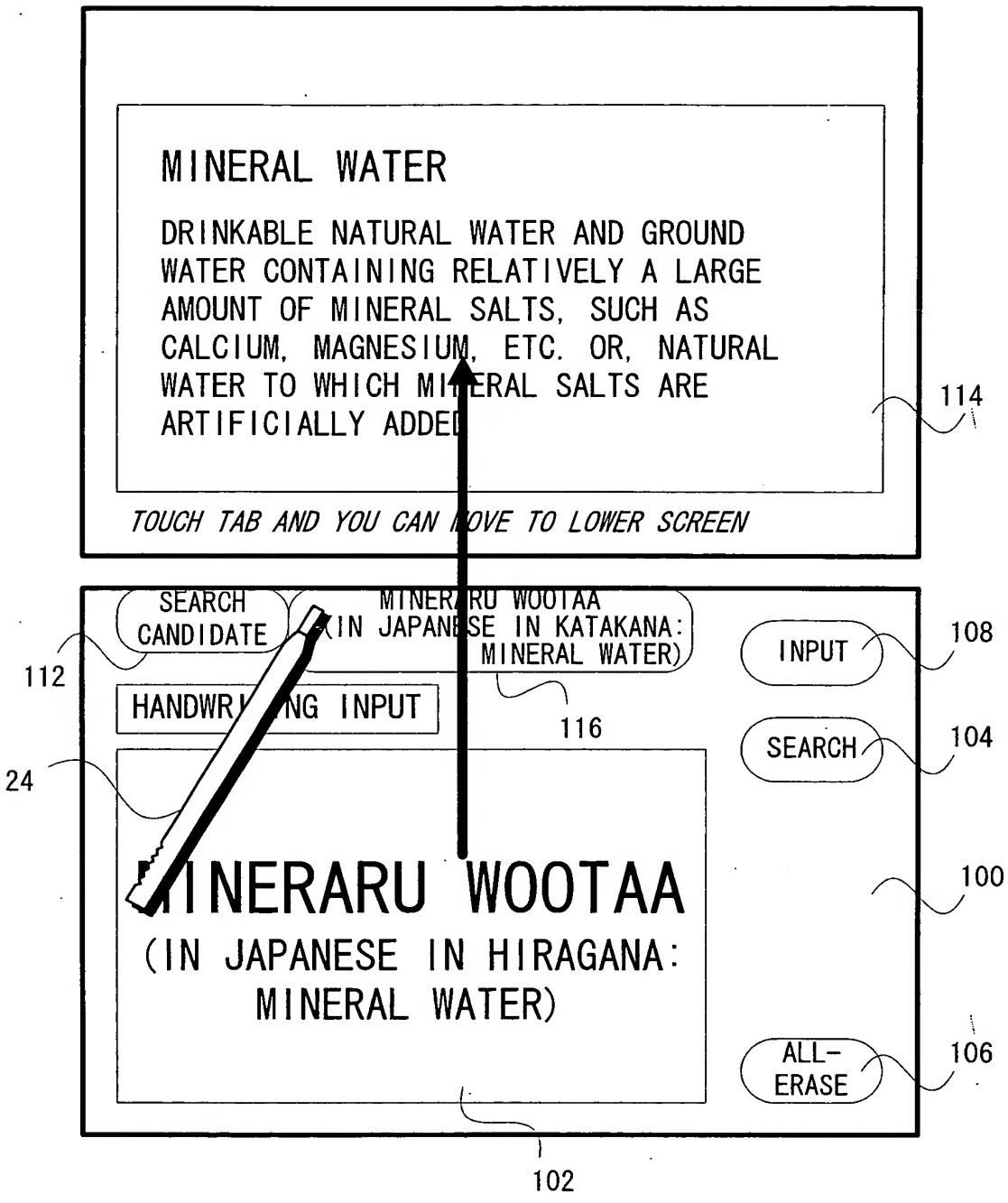

MINERAL WATER
DRINKABLE NATURAL WATER AND GROUND WATER CONTAINING RELATIVELY A LARGE AMOUNT OF MINERAL SALTS, SUCH AS CALCIUM, MAGNESIUM, ETC. OR, NATURAL WATER TO WHICH MINERAL SALTS ARE ARTIFICIALLY ADDED
114
TOUCH TAB AND YOU CAN MOVE TO LOWER SCREEN
SEARCH CANDIDATE
112
MINERARU WOOTAA (IN JAPANESE IN KATAKANA: MINERAL WATER)
116
HANDWRITING INPUT
24
MINERARU WOOTAA
(IN JAPANESE IN HIRAGANA: MINERAL WATER)
INPUT
108
SEARCH
104
100
ALL-ERASE
106
102

図14

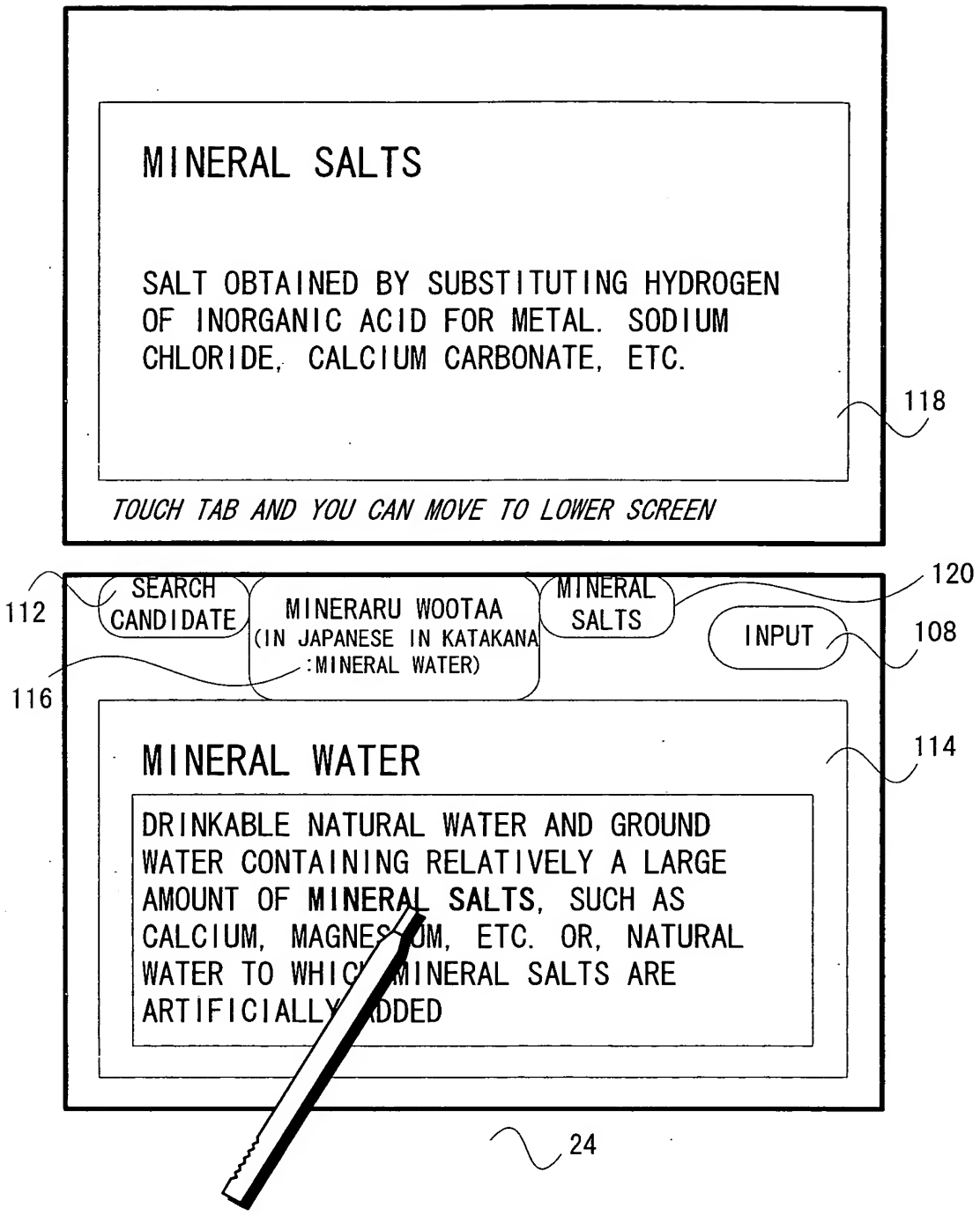

MINERAL SALTS
SALT OBTAINED BY SUBSTITUTING HYDROGEN OF INORGANIC ACID FOR METAL. SODIUM CHLORIDE, CALCIUM CARBONATE, ETC.
118
TOUCH TAB AND YOU CAN MOVE TO LOWER SCREEN
112
SEARCH CANDIDATE
MINERARU WOOTAA (IN JAPANESE IN KATAKANA :MINERAL WATER)
MINERAL SALTS
120
INPUT
108
116
MINERAL WATER
114
DRINKABLE NATURAL WATER AND GROUND WATER CONTAINING RELATIVELY A LARGE AMOUNT OF MINERAL SALTS, SUCH AS CALCIUM, MAGNESIUM, ETC. OR, NATURAL WATER TO WHICH MINERAL SALTS ARE ARTIFICIALLY ADDED
24

FIG. 15

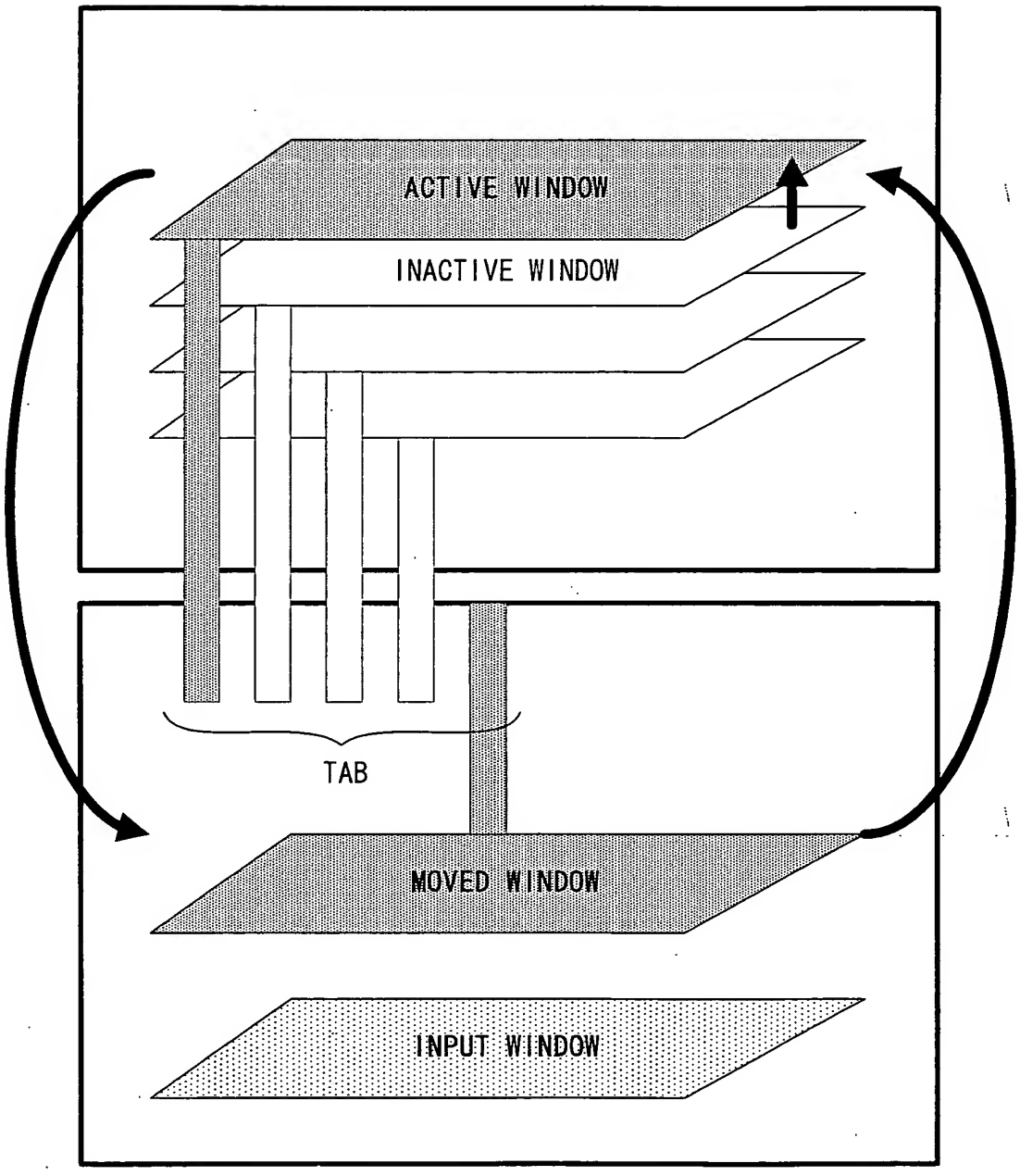

ACTIVE WINDOW
INACTIVE WINDOW
TAB
MOVED WINDOW
INPUT WINDOW

FIG. 16

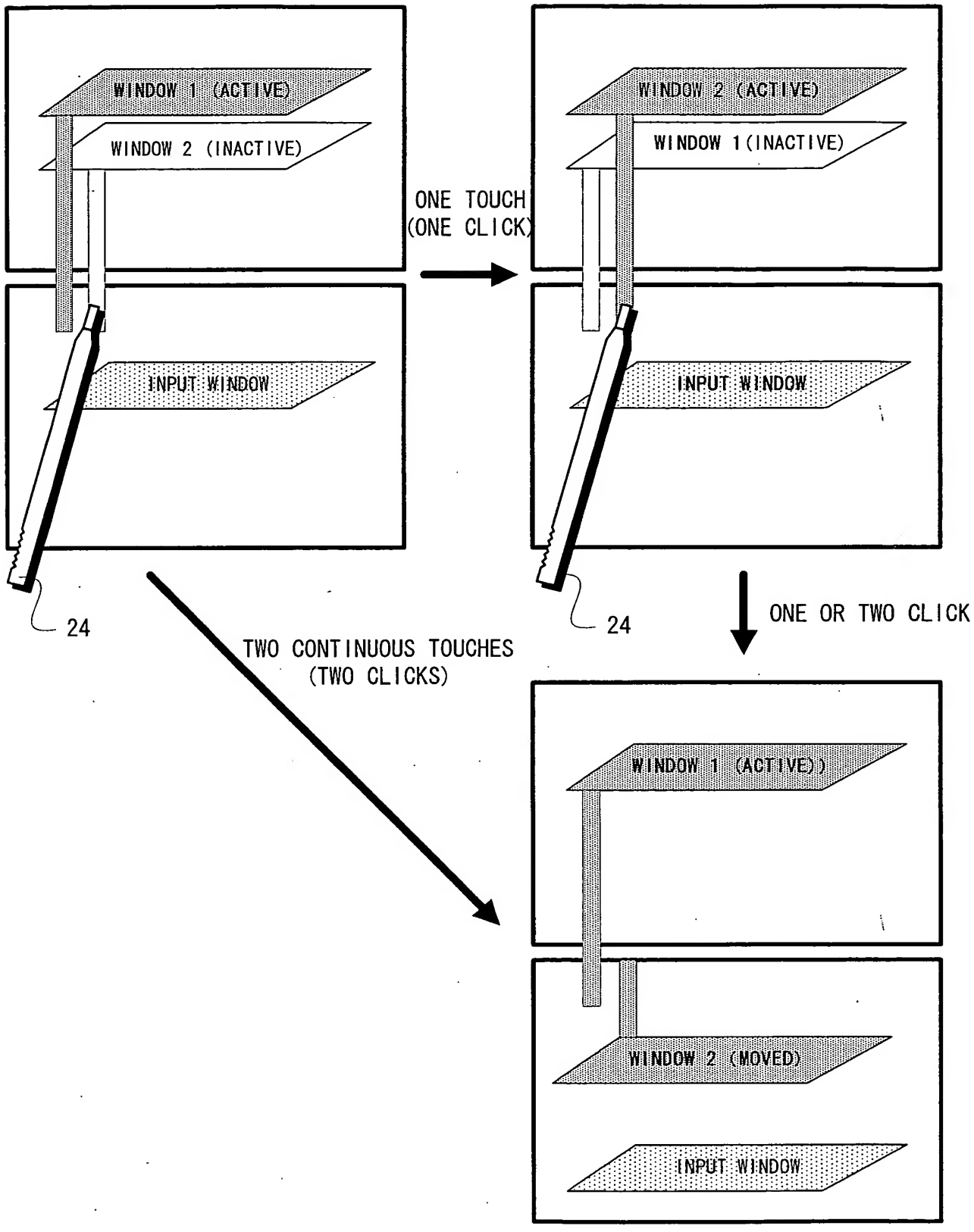

WINDOW 1 (ACTIVE)
WINDOW 2 (INACTIVE)
INPUT WINDOW
24
ONE TOUCH
(ONE CLICK)
WINDOW 2 (ACTIVE)
WINDOW 1 (INACTIVE)
INPUT WINDOW
24
ONE OR TWO CLICK
TWO CONTINUOUS TOUCHES
(TWO CLICKS)
WINDOW 1 (ACTIVE))
WINDOW 2 (MOVED)
INPUT WINDOW

FIG. 17

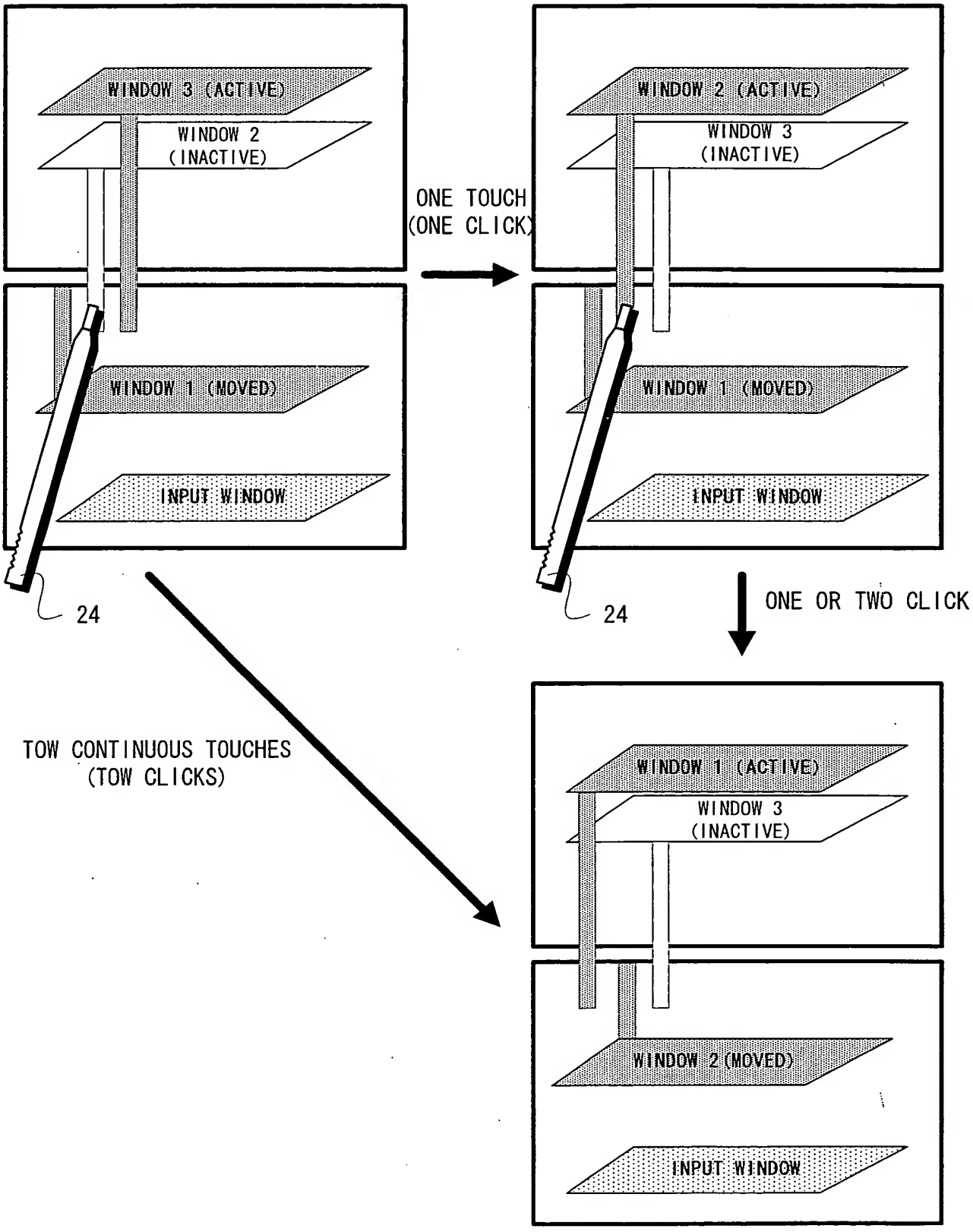

WINDOW 3 (ACTIVE)
WINDOW 2
(INACTIVE)
WINDOW 1 (MOVED)
INPUT WINDOW
24
ONE TOUCH
(ONE CLICK)
WINDOW 2 (ACTIVE)
WINDOW 3
(INACTIVE)
WINDOW 1 (MOVED)
INPUT WINDOW
24
ONE OR TWO CLICK
TOW CONTINUOUS TOUCHES
(TOW CLICKS)
WINDOW 1 (ACTIVE)
WINDOW 3
(INACTIVE)
WINDOW 2 (MOVED)
INPUT WINDOW

FIG. 18

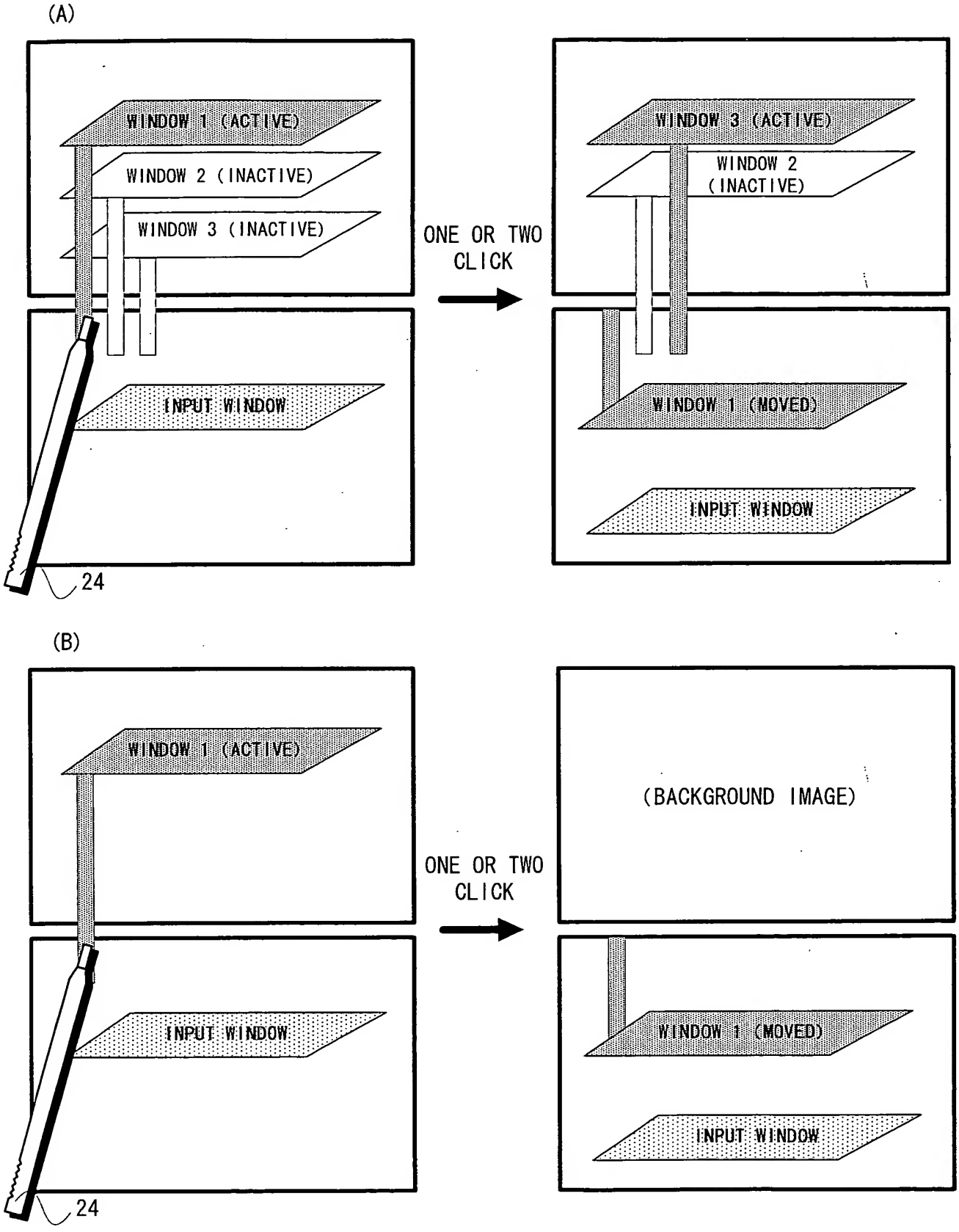

(A)
WINDOW 1 (ACTIVE)
WINDOW 2 (INACTIVE)
WINDOW 3 (INACTIVE)
INPUT WINDOW
24
ONE OR TWO CLICK
WINDOW 3 (ACTIVE)
WINDOW 2 (INACTIVE)
WINDOW 1 (MOVED)
INPUT WINDOW
(B)
WINDOW 1 (ACTIVE)
INPUT WINDOW
24
ONE OR TWO CLICK
(BACKGROUND IMAGE)
WINDOW 1 (MOVED)
INPUT WINDOW

FIG. 19

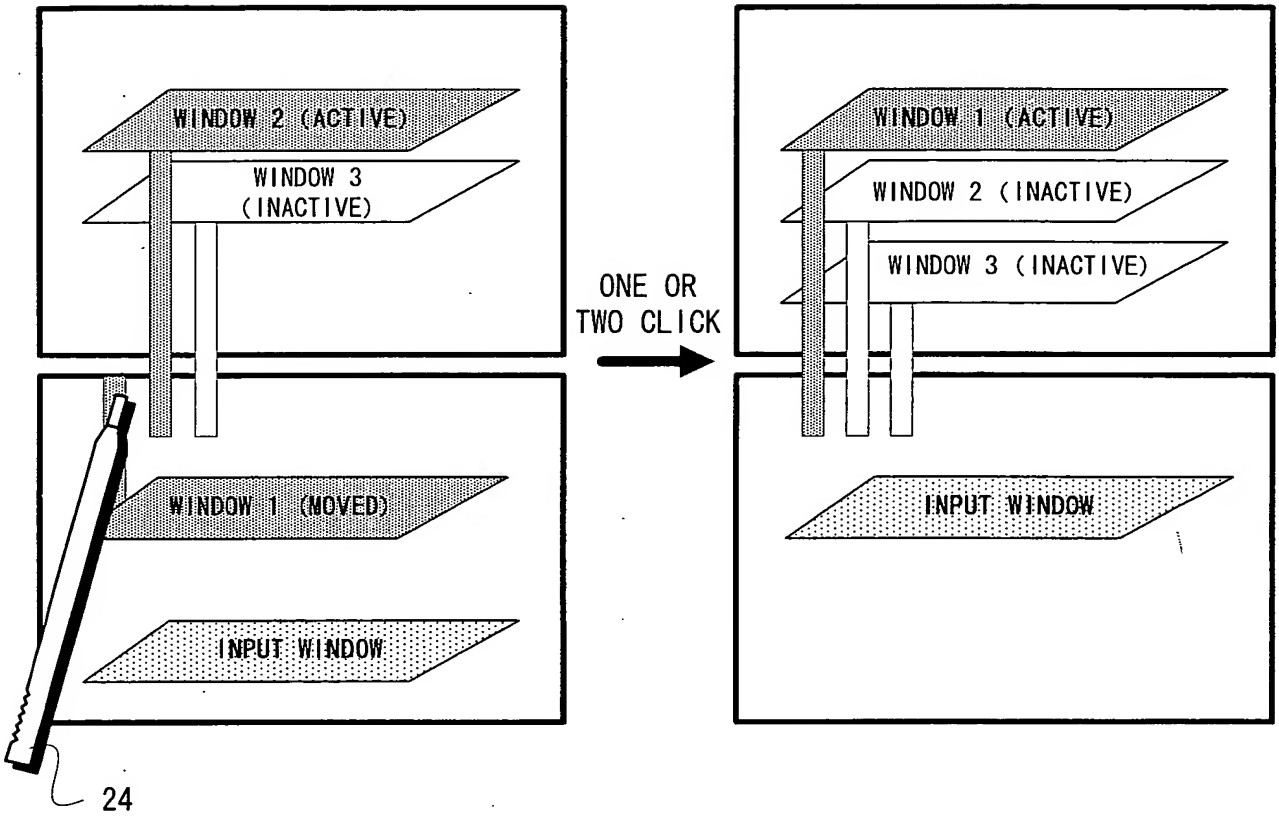
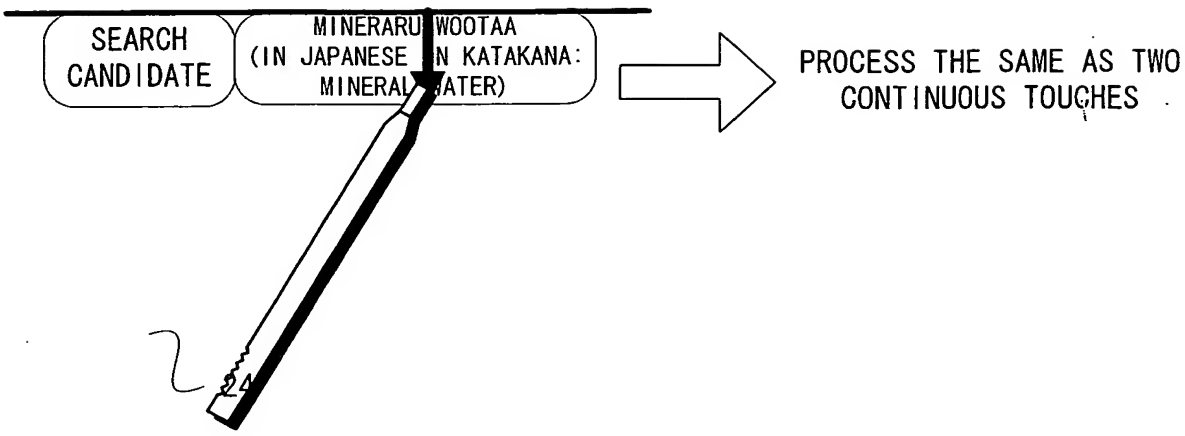

WINDOW 2 (ACTIVE)
WINDOW 3
(INACTIVE)
WINDOW 1 (MOVED)
INPUT WINDOW
24
ONE OR
TWO CLICK
WINDOW 1 (ACTIVE)
WINDOW 2 (INACTIVE)
WINDOW 3 (INACTIVE)
INPUT WINDOW

FIG. 20

(A)


SEARCH CANDIDATE
MINERARU WOOTAA
(IN JAPANESE IN KATAKANA:
MINERAL WATER)
PROCESS THE SAME AS TWO CONTINUOUS TOUCHES
24

(B)

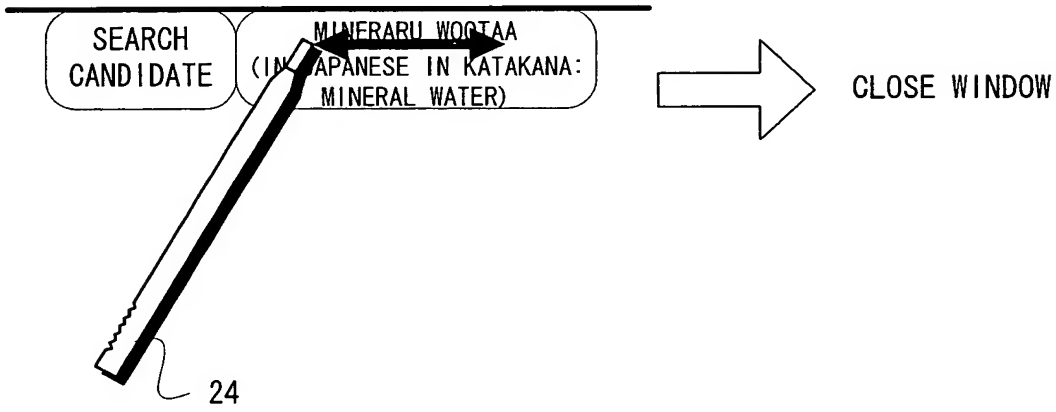

SEARCH CANDIDATE
MINERARU WOOTAA
(IN JAPANESE IN KATAKANA:
MINERAL WATER)
CLOSE WINDOW
24

FIG. 21

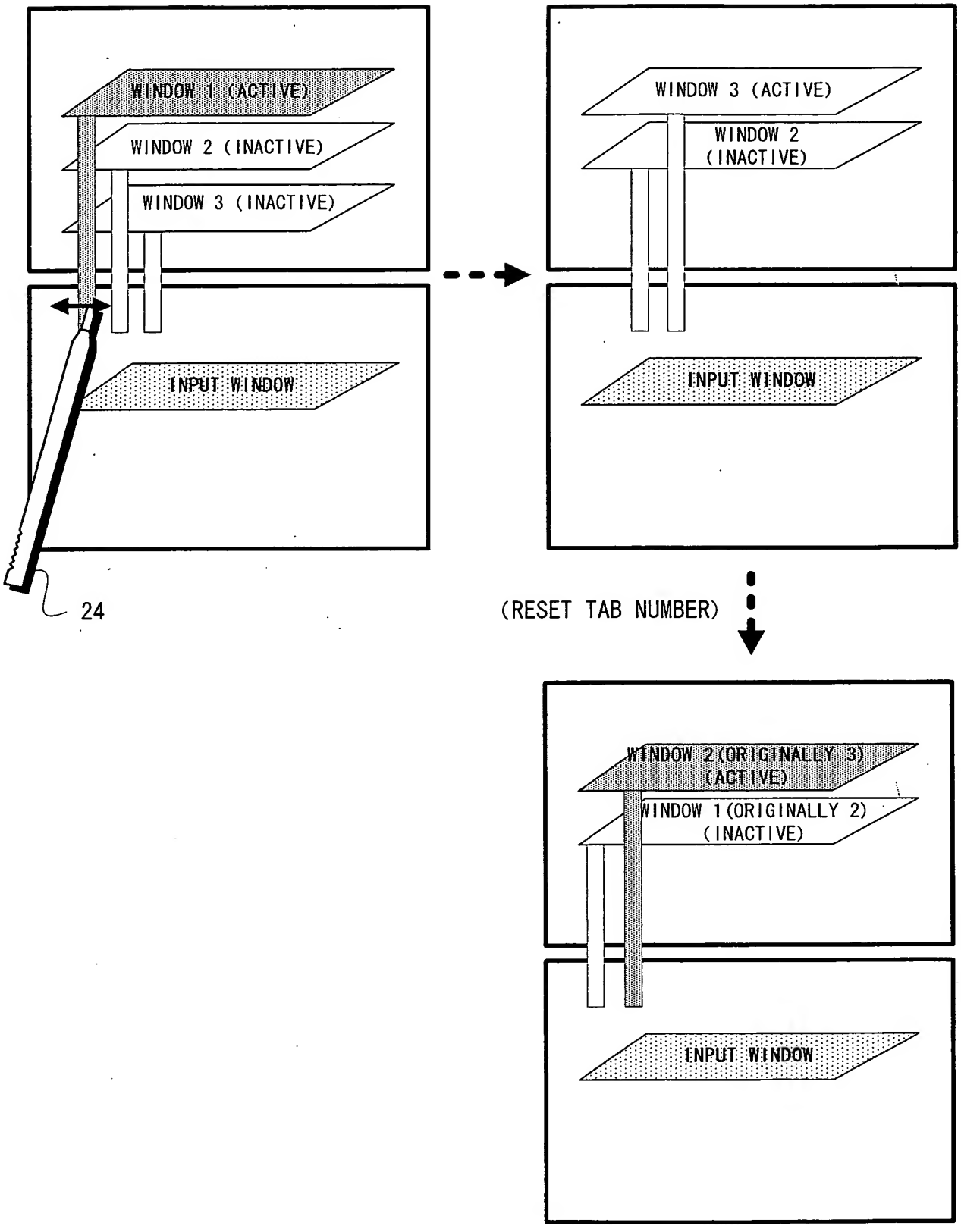

WINDOW 1 (ACTIVE)
WINDOW 2 (INACTIVE)
WINDOW 3 (INACTIVE)
INPUT WINDOW
24
WINDOW 3 (ACTIVE)
WINDOW 2
(INACTIVE)
INPUT WINDOW
(RESET TAB NUMBER)
WINDOW 2(ORIGINALLY 3)
(ACTIVE)
WINDOW 1(ORIGINALLY 2)
(INACTIVE)
INPUT WINDOW

FIG. 22

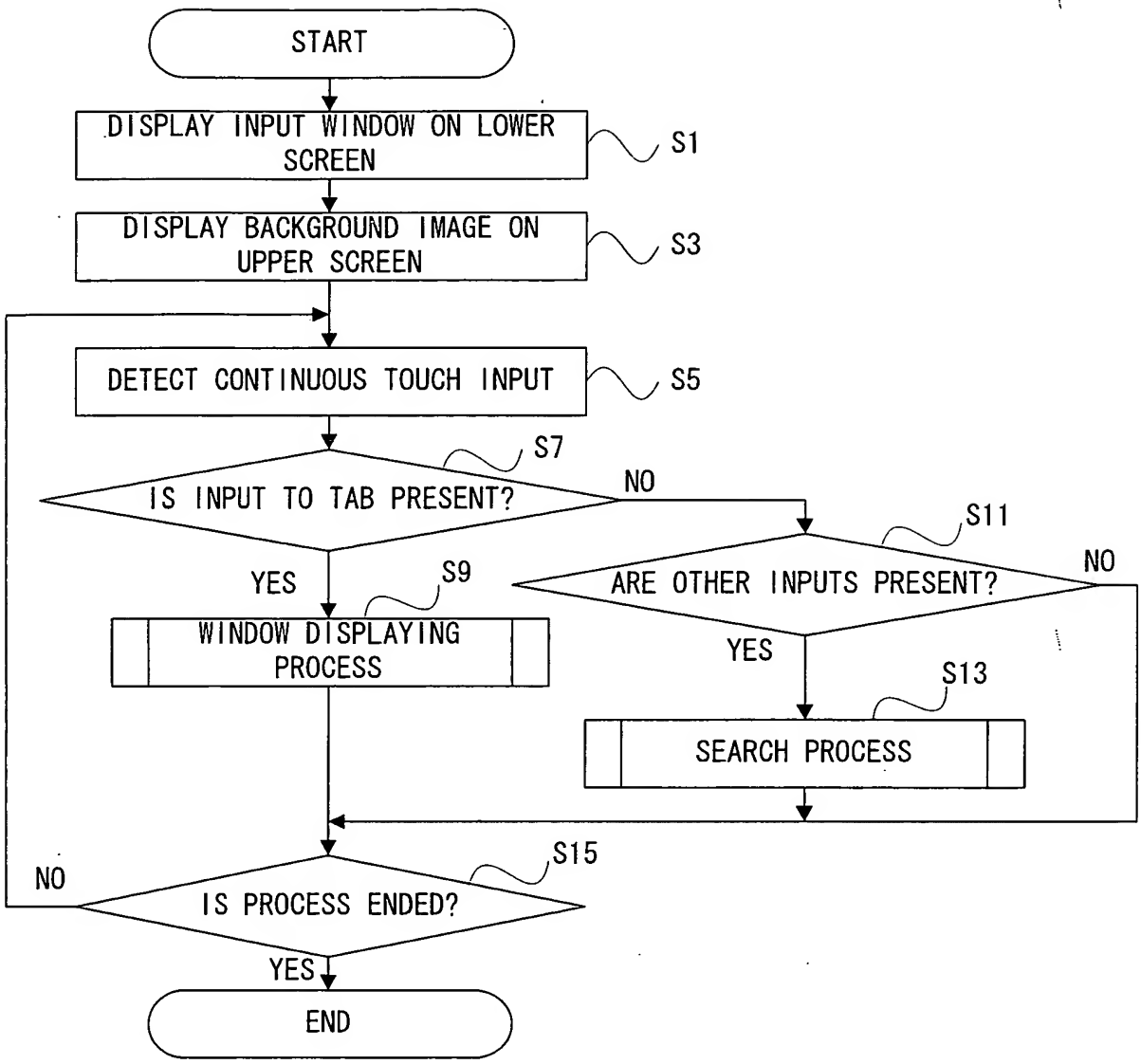

START
DISPLAY INPUT WINDOW ON LOWER SCREEN
S1
DISPLAY BACKGROUND IMAGE ON UPPER SCREEN
S3
DETECT CONTINUOUS TOUCH INPUT
S5
S7
IS INPUT TO TAB PRESENT?
NO
YES
S9
WINDOW DISPLAYING PROCESS
S11
ARE OTHER INPUTS PRESENT?
NO
YES
S13
SEARCH PROCESS
S15
NO
IS PROCESS ENDED?
YES
END

FIG. 23

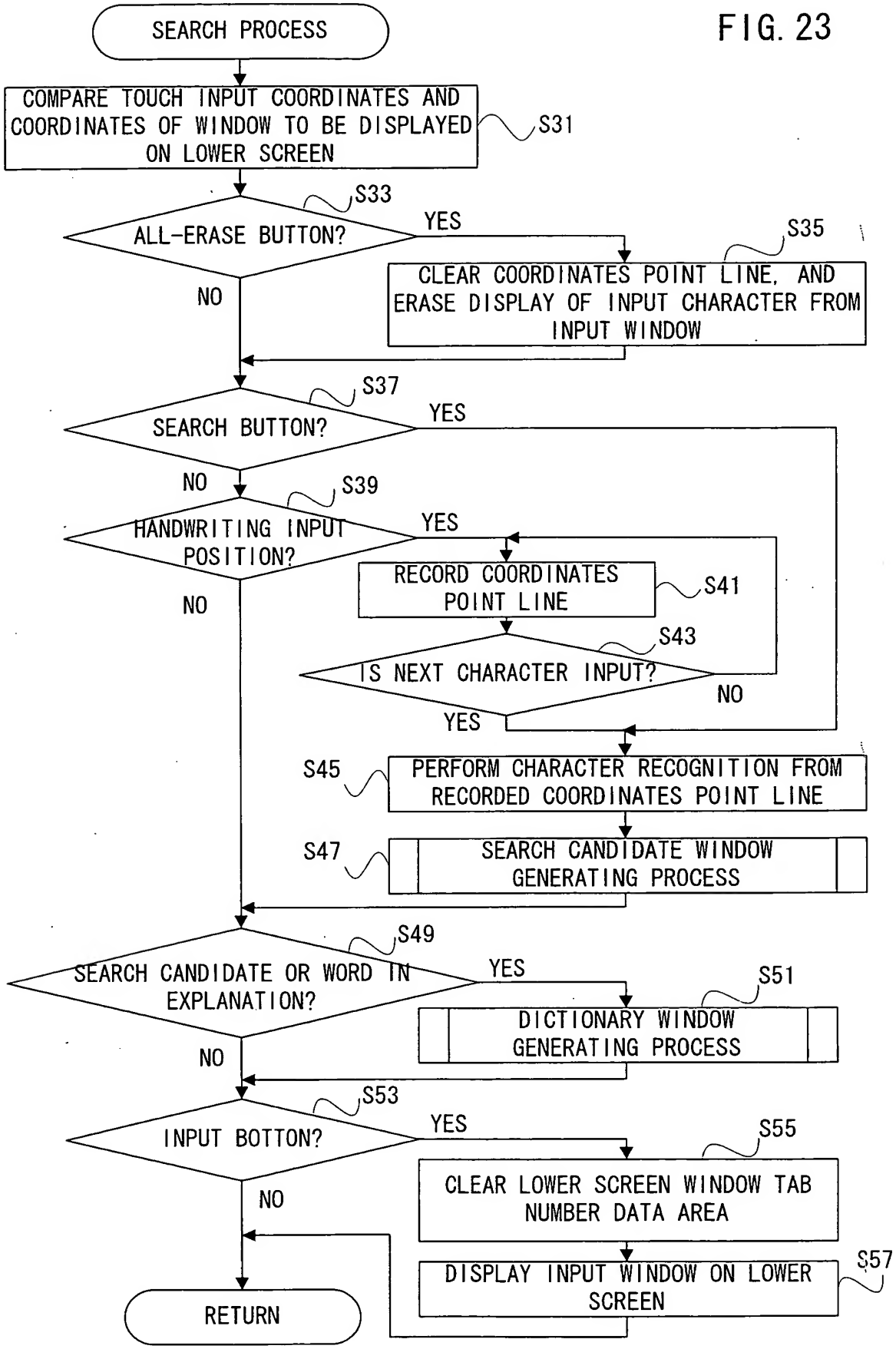

SEARCH PROCESS
COMPARE TOUCH INPUT COORDINATES AND COORDINATES OF WINDOW TO BE DISPLAYED ON LOWER SCREEN
S31
S33
ALL-ERASE BUTTON?
YES
S35
CLEAR COORDINATES POINT LINE, AND ERASE DISPLAY OF INPUT CHARACTER FROM INPUT WINDOW
NO
S37
SEARCH BUTTON?
YES
NO
S39
HANDWRITING INPUT POSITION?
YES
RECORD COORDINATES POINT LINE
S41
NO
S43
IS NEXT CHARACTER INPUT?
NO
YES
S45
PERFORM CHARACTER RECOGNITION FROM RECORDED COORDINATES POINT LINE
S47
SEARCH CANDIDATE WINDOW GENERATING PROCESS
S49
SEARCH CANDIDATE OR WORD IN EXPLANATION?
YES
S51
DICTIONARY WINDOW GENERATING PROCESS
NO
S53
INPUT BOTTON?
YES
S55
CLEAR LOWER SCREEN WINDOW TAB NUMBER DATA AREA
NO
S57
DISPLAY INPUT WINDOW ON LOWER SCREEN
RETURN

FIG. 24

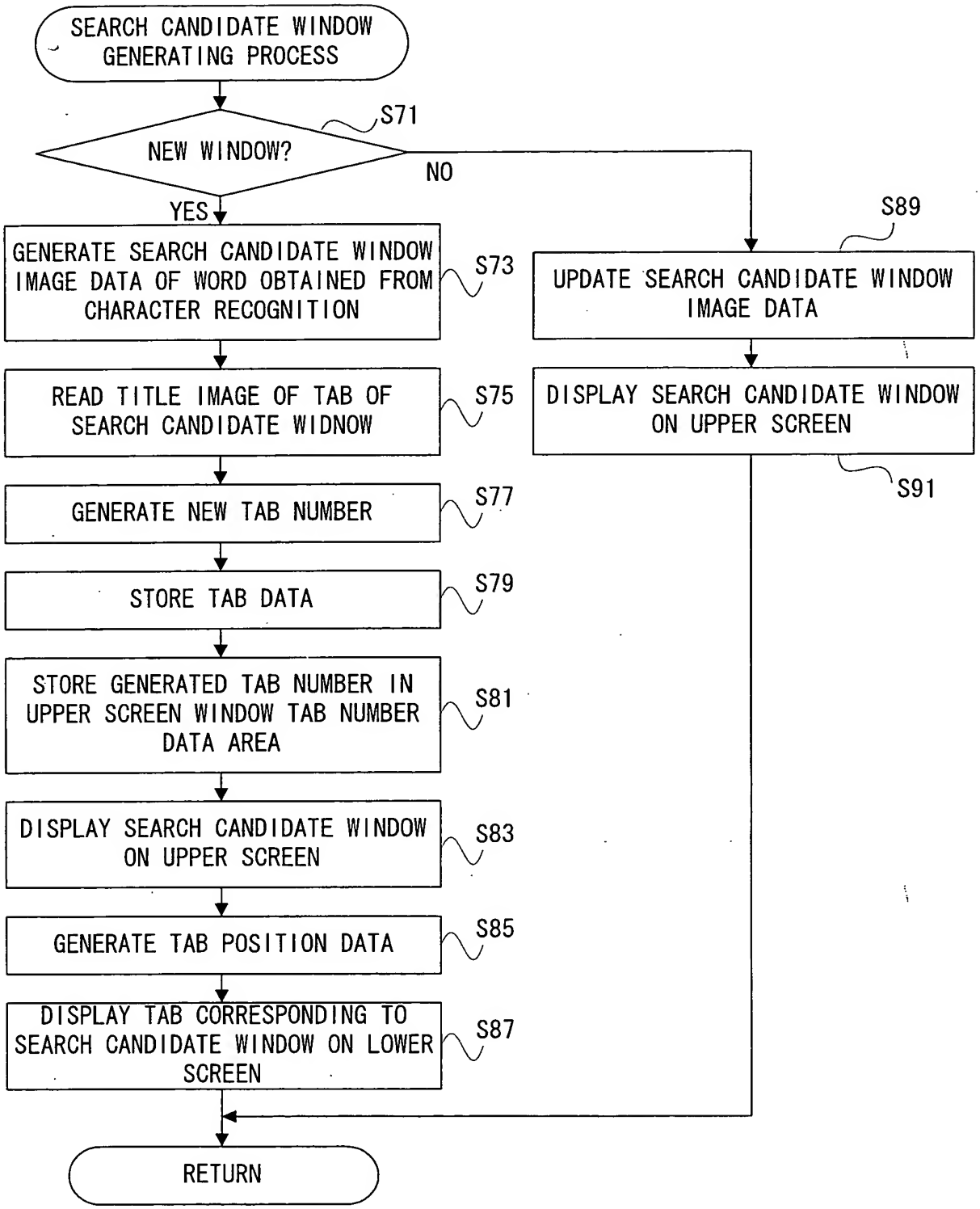

SEARCH CANDIDATE WINDOW GENERATING PROCESS
S71
NEW WINDOW?
NO
YES
GENERATE SEARCH CANDIDATE WINDOW IMAGE DATA OF WORD OBTAINED FROM CHARACTER RECOGNITION
S73
READ TITLE IMAGE OF TAB OF SEARCH CANDIDATE WIDNOW
S75
GENERATE NEW TAB NUMBER
S77
STORE TAB DATA
S79
STORE GENERATED TAB NUMBER IN UPPER SCREEN WINDOW TAB NUMBER DATA AREA
S81
DISPLAY SEARCH CANDIDATE WINDOW ON UPPER SCREEN
S83
GENERATE TAB POSITION DATA
S85
DISPLAY TAB CORRESPONDING TO SEARCH CANDIDATE WINDOW ON LOWER SCREEN
S87
S89
UPDATE SEARCH CANDIDATE WINDOW IMAGE DATA
DISPLAY SEARCH CANDIDATE WINDOW ON UPPER SCREEN
S91
RETURN

FIG. 25

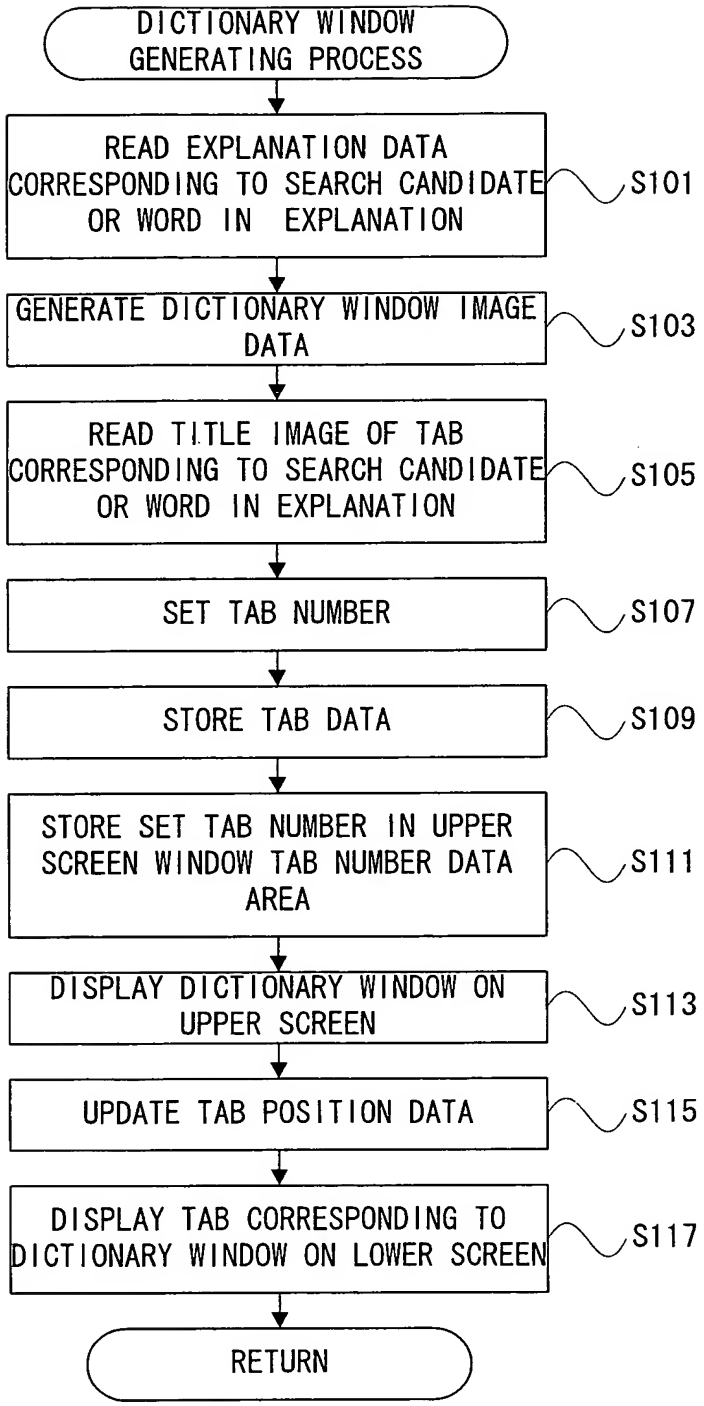

DICTIONARY WINDOW GENERATING PROCESS
READ EXPLANATION DATA CORRESPONDING TO SEARCH CANDIDATE OR WORD IN EXPLANATION
S101
GENERATE DICTIONARY WINDOW IMAGE DATA
S103
READ TITLE IMAGE OF TAB CORRESPONDING TO SEARCH CANDIDATE OR WORD IN EXPLANATION
S105
SET TAB NUMBER
S107
STORE TAB DATA
S109
STORE SET TAB NUMBER IN UPPER SCREEN WINDOW TAB NUMBER DATA AREA
S111
DISPLAY DICTIONARY WINDOW ON UPPER SCREEN
S113
UPDATE TAB POSITION DATA
S115
DISPLAY TAB CORRESPONDING TO DICTIONARY WINDOW ON LOWER SCREEN
S117
RETURN

FIG. 26

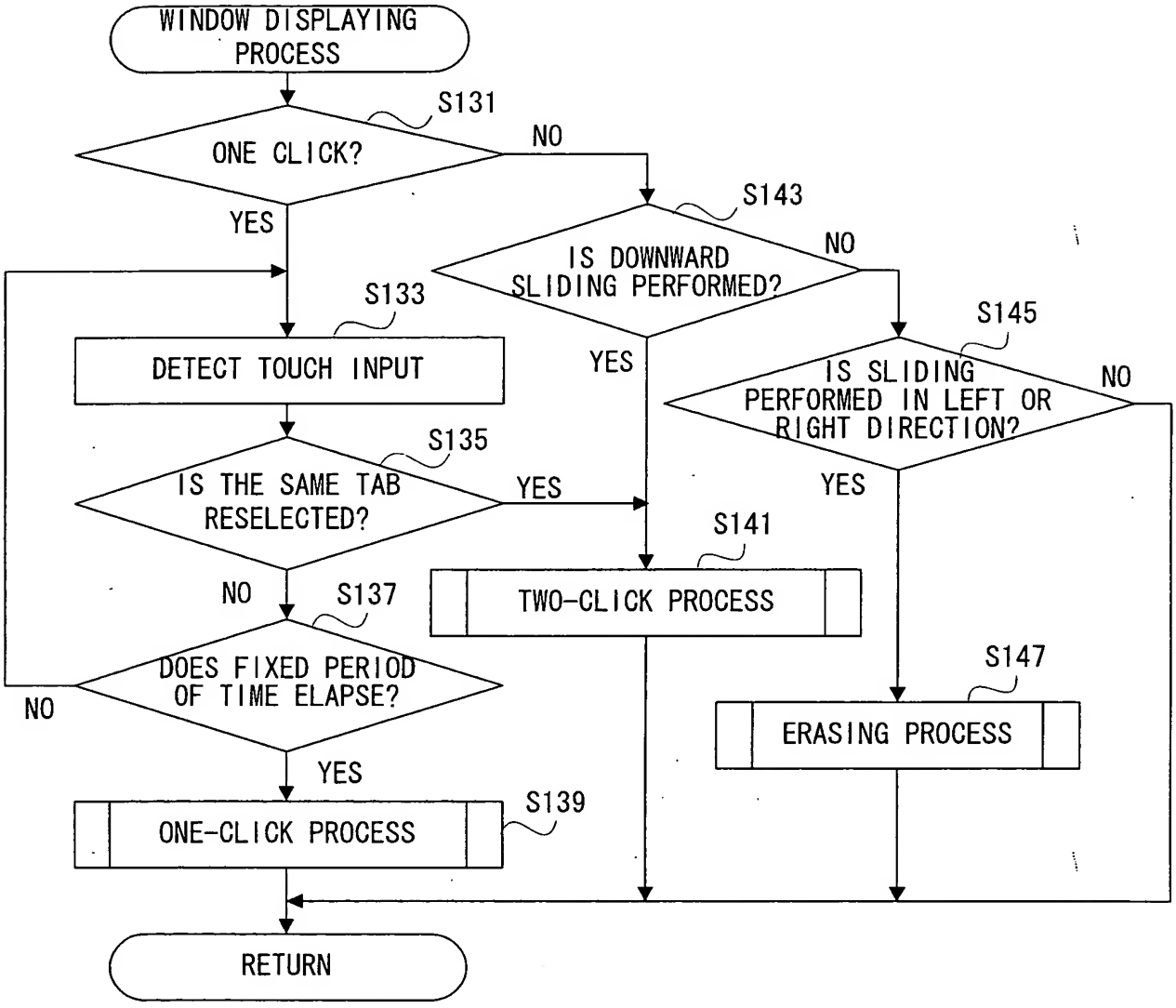

WINDOW DISPLAYING PROCESS
S131
ONE CLICK?
NO
YES
S143
IS DOWNWARD SLIDING PERFORMED?
NO
YES
S133
DETECT TOUCH INPUT
S145
IS SLIDING PERFORMED IN LEFT OR RIGHT DIRECTION?
NO
YES
S135
IS THE SAME TAB RESELECTED?
YES
S141
TWO-CLICK PROCESS
NO
S137
DOES FIXED PERIOD OF TIME ELAPSE?
NO
S147
ERASING PROCESS
YES
S139
ONE-CLICK PROCESS
RETURN

FIG. 27

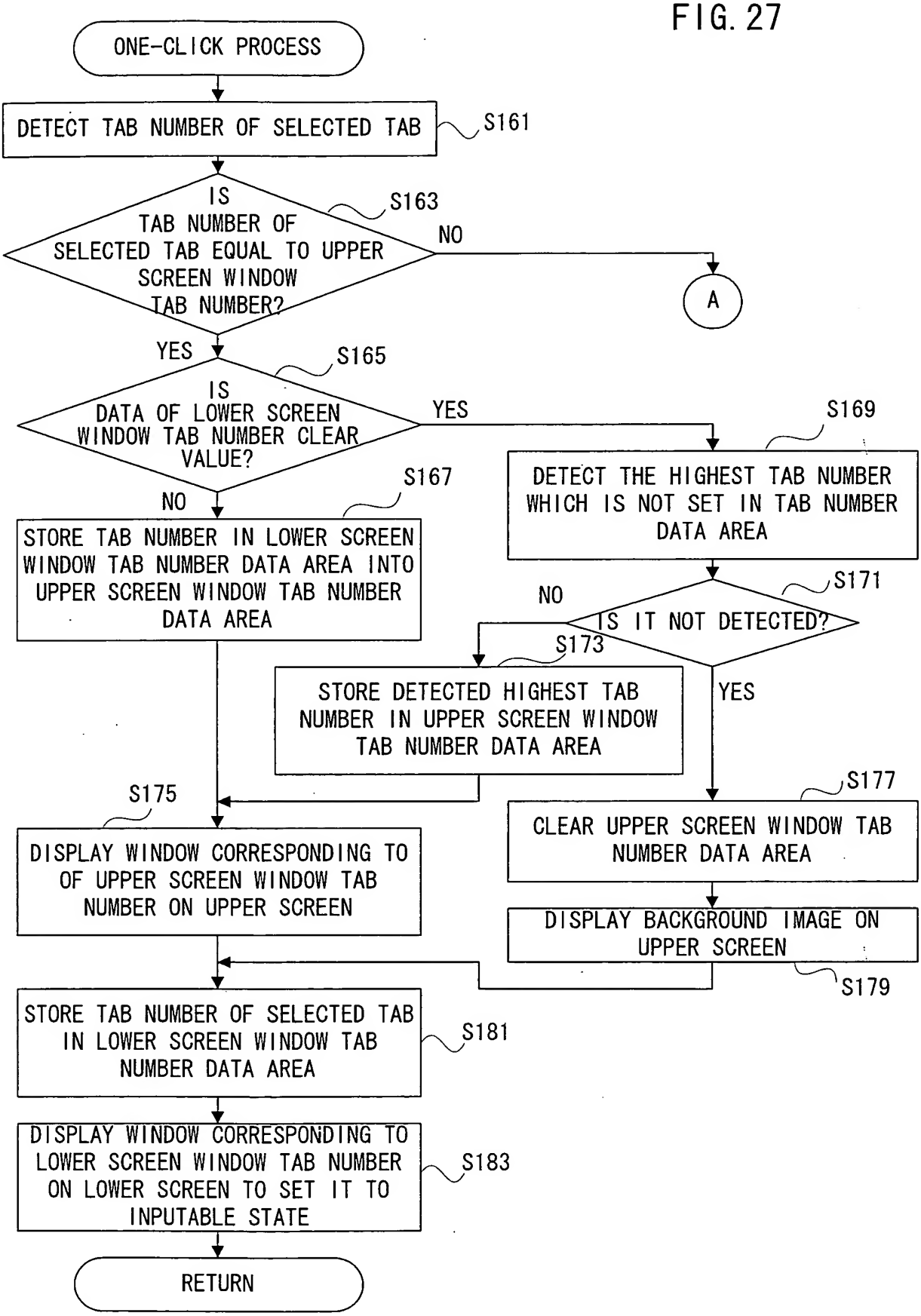

ONE-CLICK PROCESS
DETECT TAB NUMBER OF SELECTED TAB
S161
IS TAB NUMBER OF SELECTED TAB EQUAL TO UPPER SCREEN WINDOW TAB NUMBER?
S163
NO
A
YES
IS DATA OF LOWER SCREEN WINDOW TAB NUMBER CLEAR VALUE?
S165
YES
S169
DETECT THE HIGHEST TAB NUMBER WHICH IS NOT SET IN TAB NUMBER DATA AREA
NO
S167
STORE TAB NUMBER IN LOWER SCREEN WINDOW TAB NUMBER DATA AREA INTO UPPER SCREEN WINDOW TAB NUMBER DATA AREA
S171
NO
IS IT NOT DETECTED?
S173
STORE DETECTED HIGHEST TAB NUMBER IN UPPER SCREEN WINDOW TAB NUMBER DATA AREA
YES
S175
DISPLAY WINDOW CORRESPONDING TO OF UPPER SCREEN WINDOW TAB NUMBER ON UPPER SCREEN
S177
CLEAR UPPER SCREEN WINDOW TAB NUMBER DATA AREA
DISPLAY BACKGROUND IMAGE ON UPPER SCREEN
S179
STORE TAB NUMBER OF SELECTED TAB IN LOWER SCREEN WINDOW TAB NUMBER DATA AREA
S181
DISPLAY WINDOW CORRESPONDING TO LOWER SCREEN WINDOW TAB NUMBER ON LOWER SCREEN TO SET IT TO INPUTABLE STATE
S183
RETURN

FIG. 28

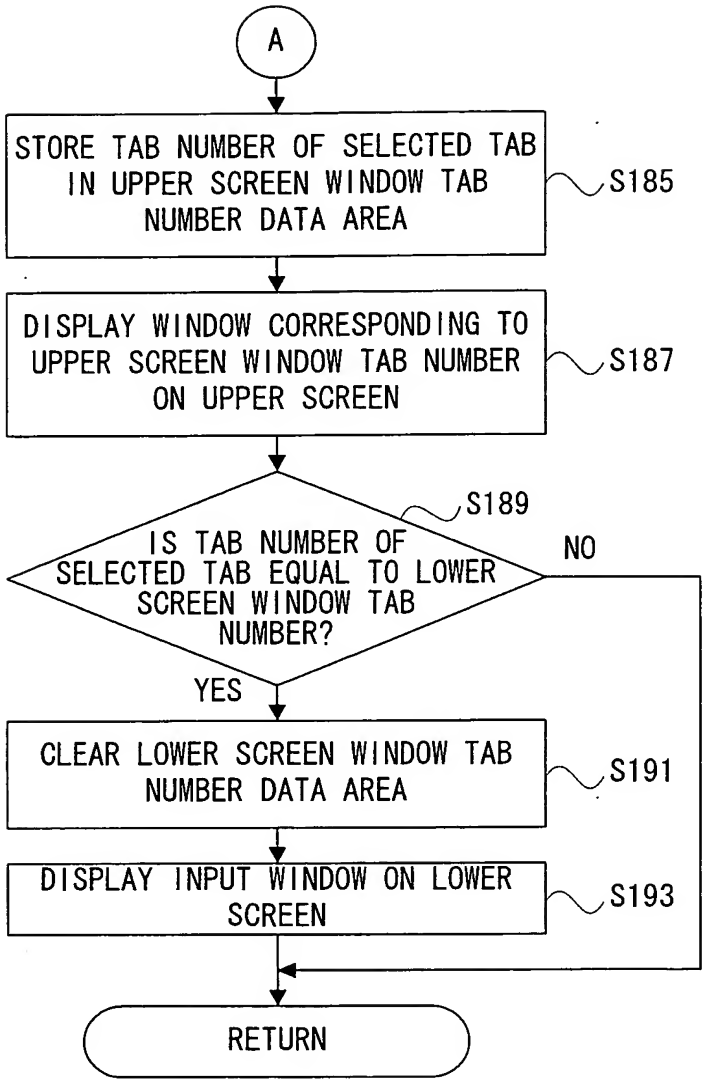

A
STORE TAB NUMBER OF SELECTED TAB IN UPPER SCREEN WINDOW TAB NUMBER DATA AREA
S185
DISPLAY WINDOW CORRESPONDING TO UPPER SCREEN WINDOW TAB NUMBER ON UPPER SCREEN
S187
S189
IS TAB NUMBER OF SELECTED TAB EQUAL TO LOWER SCREEN WINDOW TAB NUMBER?
NO
YES
CLEAR LOWER SCREEN WINDOW TAB NUMBER DATA AREA
S191
DISPLAY INPUT WINDOW ON LOWER SCREEN
S193
RETURN

FIG. 29

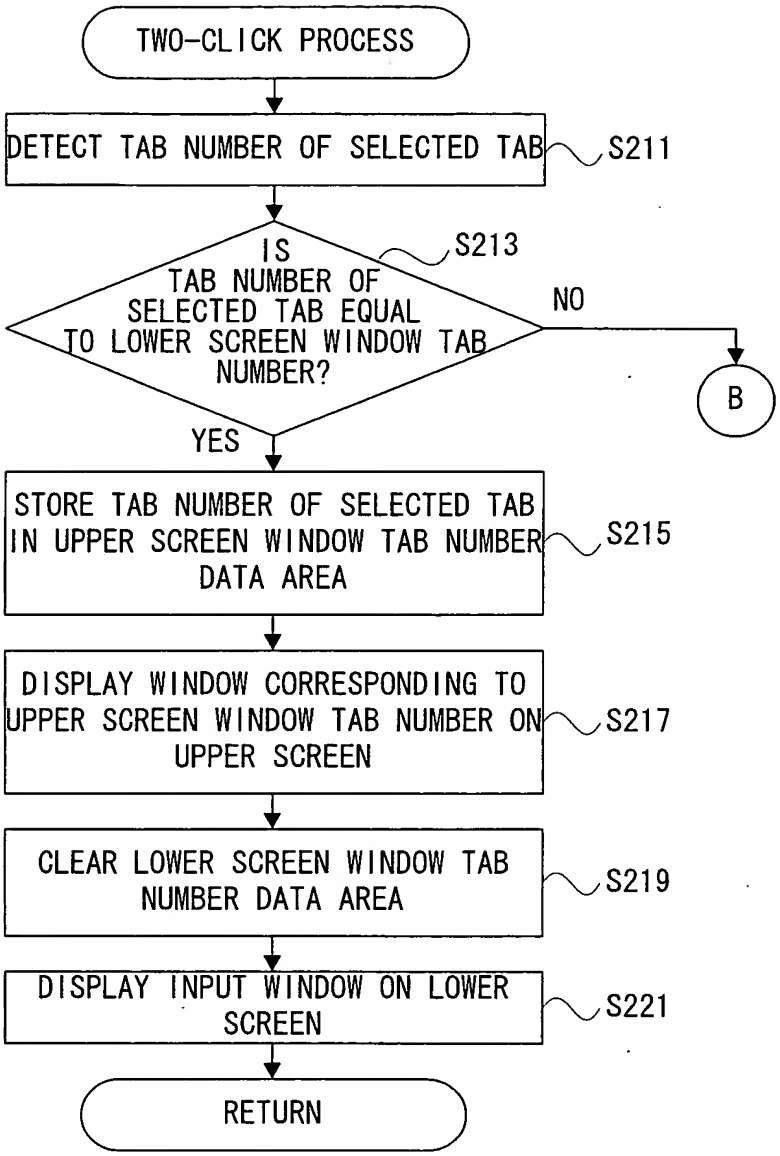

TWO-CLICK PROCESS
DETECT TAB NUMBER OF SELECTED TAB
S211
IS TAB NUMBER OF SELECTED TAB EQUAL TO LOWER SCREEN WINDOW TAB NUMBER?
S213
NO
B
YES
STORE TAB NUMBER OF SELECTED TAB IN UPPER SCREEN WINDOW TAB NUMBER DATA AREA
S215
DISPLAY WINDOW CORRESPONDING TO UPPER SCREEN WINDOW TAB NUMBER ON UPPER SCREEN
S217
CLEAR LOWER SCREEN WINDOW TAB NUMBER DATA AREA
S219
DISPLAY INPUT WINDOW ON LOWER SCREEN
S221
RETURN

FIG. 30

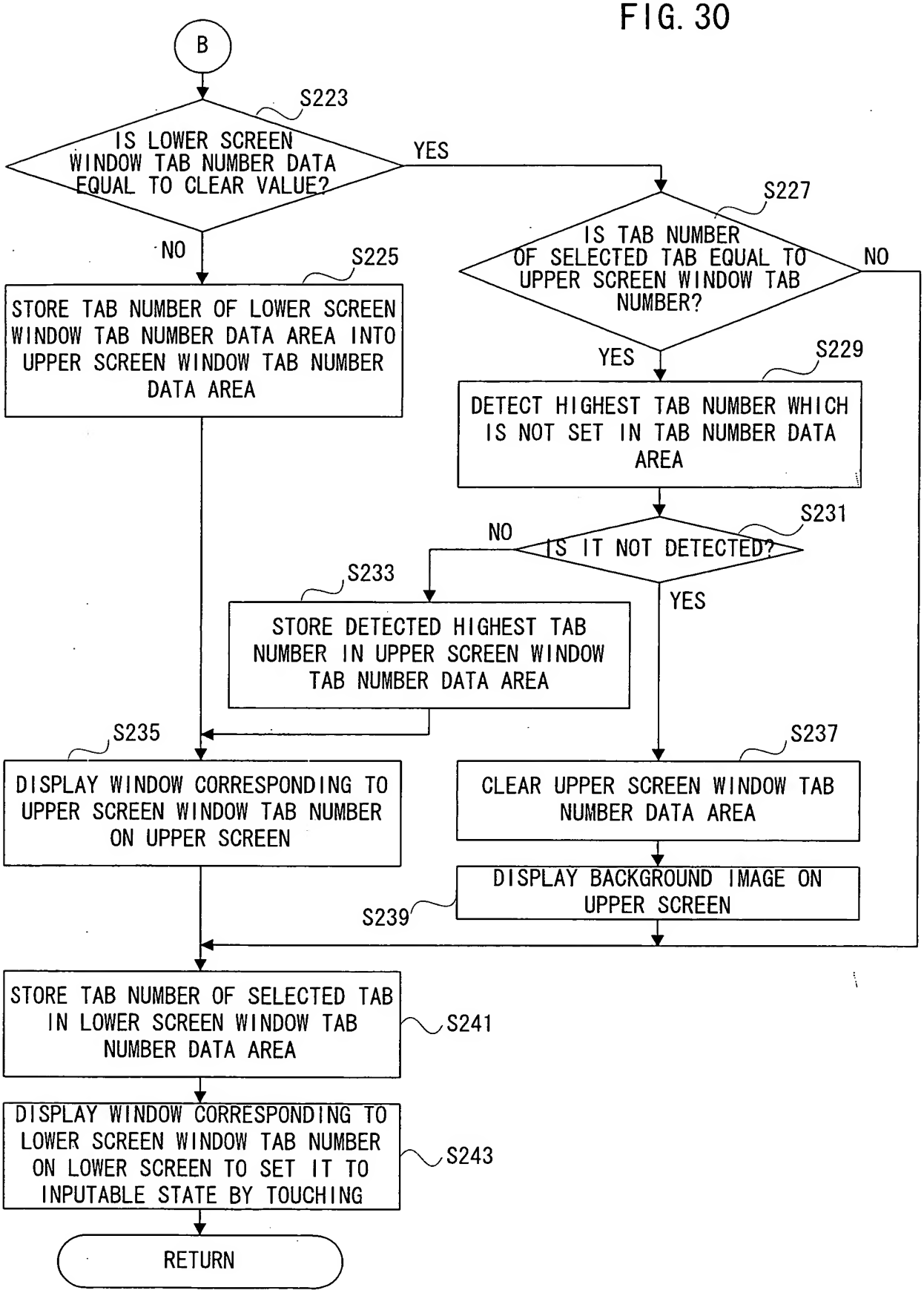

B
S223
IS LOWER SCREEN WINDOW TAB NUMBER DATA EQUAL TO CLEAR VALUE?
YES
NO
S225
STORE TAB NUMBER OF LOWER SCREEN WINDOW TAB NUMBER DATA AREA INTO UPPER SCREEN WINDOW TAB NUMBER DATA AREA
S227
IS TAB NUMBER OF SELECTED TAB EQUAL TO UPPER SCREEN WINDOW TAB NUMBER?
NO
YES
S229
DETECT HIGHEST TAB NUMBER WHICH IS NOT SET IN TAB NUMBER DATA AREA
S231
IS IT NOT DETECTED?
NO
YES
S233
STORE DETECTED HIGHEST TAB NUMBER IN UPPER SCREEN WINDOW TAB NUMBER DATA AREA
S235
DISPLAY WINDOW CORRESPONDING TO UPPER SCREEN WINDOW TAB NUMBER ON UPPER SCREEN
S237
CLEAR UPPER SCREEN WINDOW TAB NUMBER DATA AREA
S239
DISPLAY BACKGROUND IMAGE ON UPPER SCREEN
STORE TAB NUMBER OF SELECTED TAB IN LOWER SCREEN WINDOW TAB NUMBER DATA AREA
S241
DISPLAY WINDOW CORRESPONDING TO LOWER SCREEN WINDOW TAB NUMBER ON LOWER SCREEN TO SET IT TO INPUTABLE STATE BY TOUCHING
S243
RETURN

FIG. 31

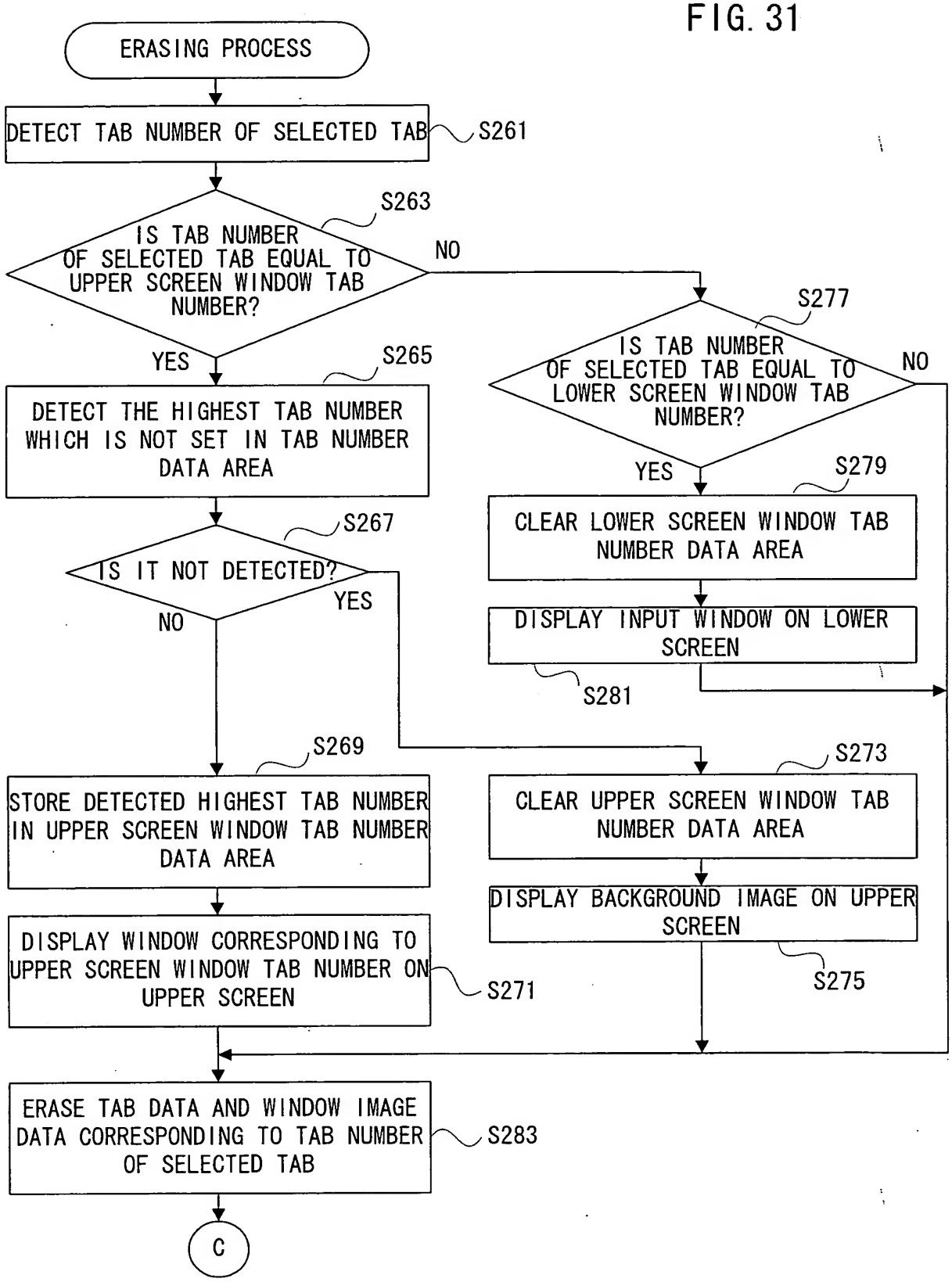

ERASING PROCESS
DETECT TAB NUMBER OF SELECTED TAB
S261
S263
IS TAB NUMBER OF SELECTED TAB EQUAL TO UPPER SCREEN WINDOW TAB NUMBER?
NO
YES
S265
DETECT THE HIGHEST TAB NUMBER WHICH IS NOT SET IN TAB NUMBER DATA AREA
S267
IS IT NOT DETECTED?
YES
NO
S269
STORE DETECTED HIGHEST TAB NUMBER IN UPPER SCREEN WINDOW TAB NUMBER DATA AREA
DISPLAY WINDOW CORRESPONDING TO UPPER SCREEN WINDOW TAB NUMBER ON UPPER SCREEN
S271
S277
IS TAB NUMBER OF SELECTED TAB EQUAL TO LOWER SCREEN WINDOW TAB NUMBER?
NO
YES
S279
CLEAR LOWER SCREEN WINDOW TAB NUMBER DATA AREA
DISPLAY INPUT WINDOW ON LOWER SCREEN
S281
S273
CLEAR UPPER SCREEN WINDOW TAB NUMBER DATA AREA
DISPLAY BACKGROUND IMAGE ON UPPER SCREEN
S275
ERASE TAB DATA AND WINDOW IMAGE DATA CORRESPONDING TO TAB NUMBER OF SELECTED TAB
S283
C

FIG. 32

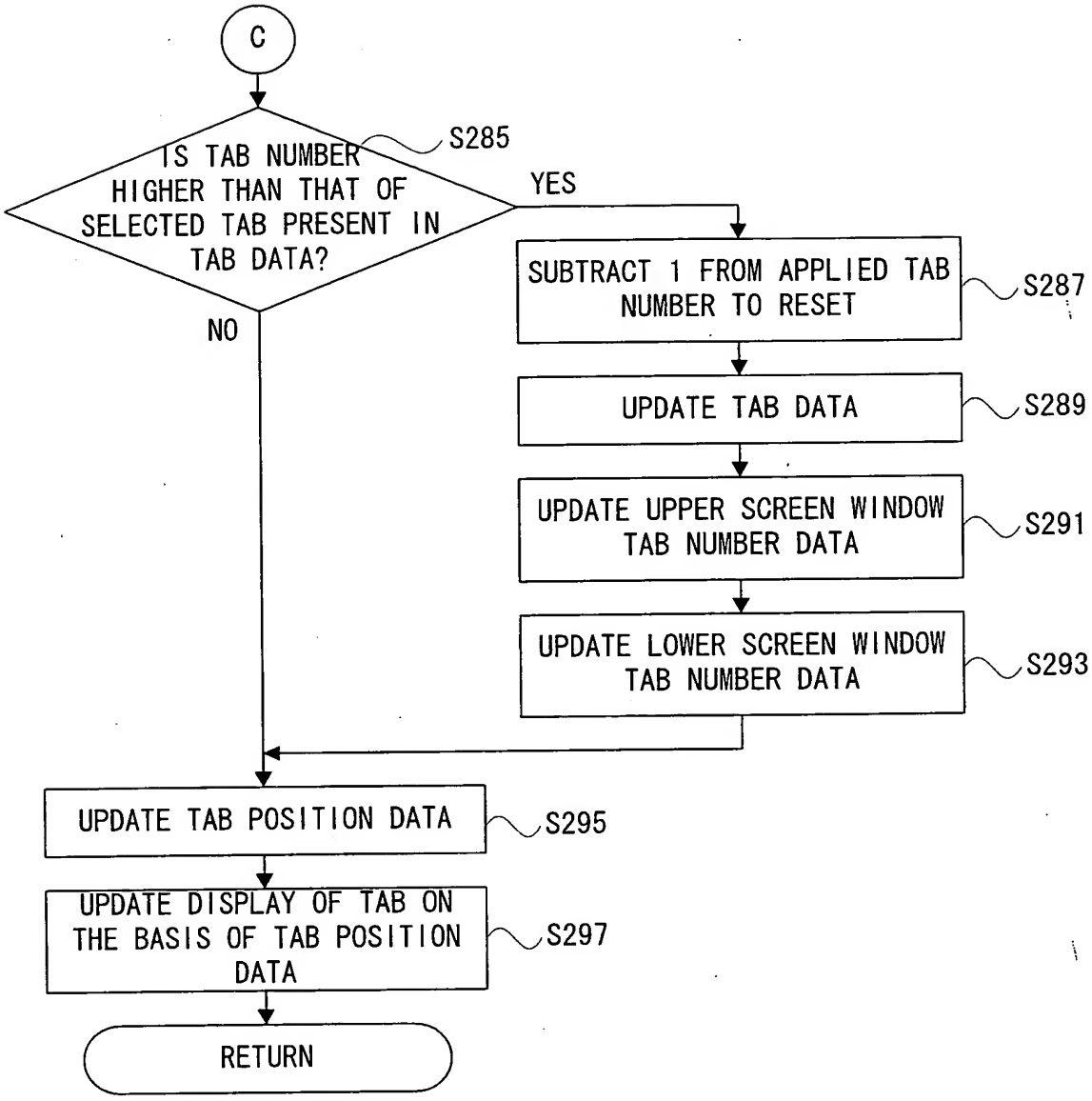
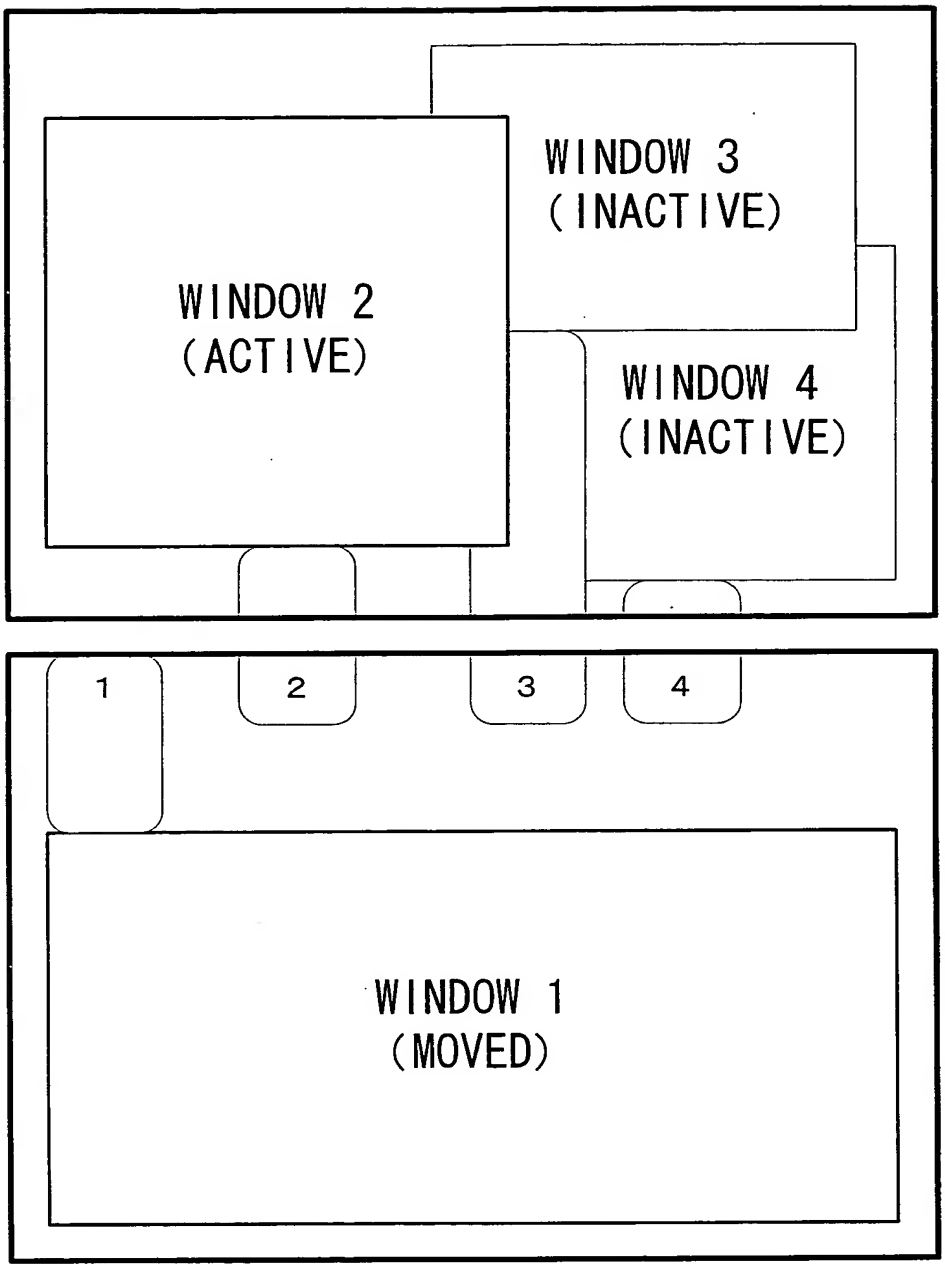

C
IS TAB NUMBER HIGHER THAN THAT OF SELECTED TAB PRESENT IN TAB DATA?
S285
YES
NO
SUBTRACT 1 FROM APPLIED TAB NUMBER TO RESET
S287
UPDATE TAB DATA
S289
UPDATE UPPER SCREEN WINDOW TAB NUMBER DATA
S291
UPDATE LOWER SCREEN WINDOW TAB NUMBER DATA
S293
UPDATE TAB POSITION DATA
S295
UPDATE DISPLAY OF TAB ON THE BASIS OF TAB POSITION DATA
S297
RETURN

FIG. 33


WINDOW 3
(INACTIVE)
WINDOW 2
(ACTIVE)
WINDOW 4
(INACTIVE)
1
2
3
4
WINDOW 1
(MOVED)